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NEWS 5	Apr 19	US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 6	Apr 22	Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 7	Apr 22	BIOSIS Gene Names now available in TOXCENTER
NEWS 8	Apr 22	Federal Research in Progress (FEDRIP) now available
NEWS 9	Jun 03	New e-mail delivery for search results now available
NEWS 10	Jun 10	MEDLINE Reload
NEWS 11	Jun 10	PCTFULL has been reloaded
NEWS 12	Jul 02	FOREGE no longer contains STANDARDS file segment
NEWS 13	Jul 22	USAN to be reloaded July 28, 2002; saved answer sets no longer valid
NEWS 14	Jul 29	Enhanced polymer searching in REGISTRY
NEWS 15	Jul 30	NETFIRST to be removed from STN
NEWS 16	Aug 08	CANCERLIT reload
NEWS 17	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 18	Aug 08	NTIS has been reloaded and enhanced
NEWS 19	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 20	Aug 19	IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS 21	Aug 19	The MEDLINE file segment of TOXCENTER has been reloaded
NEWS 22	Aug 26	Sequence searching in REGISTRY enhanced
NEWS 23	Sep 03	JAPIO has been reloaded and enhanced
NEWS 24	Sep 16	Experimental properties added to the REGISTRY file
NEWS 25	Sep 16	Indexing added to some pre-1967 records in CA/CAPLUS
NEWS 26	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS 27	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985

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=> s calendula(w)officinalis and transform?
L1 20 CALENDULA(W) OFFICINALIS AND TRANSFORM?

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L2 17 DUPLICATE REMOVE L1 (3 DUPLICATES REMOVED)

=> d l2 1-5

L2 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 2002:158008 CAPLUS
DN 136:211940
TI Nucleic acid sequence of novel genetic vector and methods for plant gene silencing
IN Baulcombe, David Charles; Martin-Hernandez, Ana Montserrat
PA Plant Bioscience Limited, UK
SO PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI WO 2002016622 A1 20020228 WO 2001-GB3623 20010813
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2001078598 A5 20020304 AU 2001-78598 20010813
PRAI GB 2000-20320 A 20000817
WO 2001-GB3623 W 20010813
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 2001:228918 CAPLUS
DN 134:262846
TI Cloning, characterization and heterologous expression of cis-prenyltransferases from plants
IN Coldren, Chris; Flint, Dennis; Hallahan, David L.; Wang, Hong
PA E.I. Du Pont de Nemours and Company, USA
SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001021650	A2	20010329	WO 2000-US25856	20000921
WO 2001021650	A3	20011213		
W: AU, BR, CA, ID, IN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
BR 2000014573	A	20020618	BR 2000-14573	20000921
EP 1214338	A2	20020619	EP 2000-965234	20000921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
PRAI US 1999-155046P	P	19990921		
WO 2000-US25856	W	20000921		

L2 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 2000:84996 CAPLUS
DN 132:133227
TI cDNA sequences of PC4 transcriptional coactivator from corn, rice, soybean, wheat, marigold, and Vernonia and uses
IN Cahoon, Rebecca E.; Caimi, Perry G.; Odell, Joan T.; Sakai, Hajime; Zhu, Qun
PA E.I. Du Pont De Nemours and Company, USA
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI WO 2000005377 A2 20000203 WO 1999-US16479 19990721
WO 2000005377 A3 20000427
W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9950054 A1 20000214 AU 1999-50054 19990721
EP 1104467 A2 20010606 EP 1999-934163 19990721
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI US 1998-93687P P 19980722
WO 1999-US16479 W 19990721

L2 ANSWER 4 OF 17 AGRICOLA
AN 1999:48617 AGRICOLA
DN IND21990623
TI Transient expression of green fluorescent protein in various plastid types following microprojectile bombardment.
AU Hibberd, J.M.; Linley, P.J.; Khan, M.S.; Gray, J.C.
CS University of Cambridge, Cambridge, UK.
AV DNAL (QK710.P68)
SO The Plant journal : for cell and molecular biology, Dec 1998. Vol. 16, No. 5. p. 627-632
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412
NTE Includes references
CY England; United Kingdom
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L2 ANSWER 5 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 2000:200804 BIOSIS
DN PREV200000200804
TI The ultrastructure of the liver parenchyma cells in Walker tumor-bearing animals treated with ***Calendula*** ***officinalis*** extract.
AU Miscalencu, Dumitru; Mailat, Florica; Popa, Crina; Ivanciu, Lacramioara
SO Analele Universitatii Bucuresti Biologie, (1997) No. 46, pp. 3-8.
ISSN: 0378-8989.
DT Article
LA English
SL English

=> d l2 6-10

L2 ANSWER 6 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:189399 BIOSIS
DN PREV199800189399
TI Blast- ***transformation*** and antibody synthesis in chickens treated with a ***Calendula*** ***officinalis*** extraction.
AU Dumitru, C.; Vasiu, C.; Spinu, Marina; Brudasca, F.; Boldizsar, E.; Dobrean, V.; Fartan, S.
SO Branzas, P. [Editor]. (1996) pp. 184. Actualitati in patologia animalelor

domestice: Referate, rezumate, postere. Current status in domestic animal pathology: Reports, summaries, posters.
Publisher: Universitatea de Stiinte Agricole si Medicina Veterinara Cluj, Romania.
Meeting Info.: 22nd Symposium of the Association of Romanian Veterinarians Cluj, Romania November 7-8, 1996 Association of Romanian Veterinarians . ISBN: 973-9243-04-5.
DT Conference
LA English

L2 ANSWER 7 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:189381 BIOSIS
DN PREV199800189381
TI Effects of several ***Calendula*** ***officinalis*** and Hippophae rhamnoides extraction on non-specific and specific cellular immune responses in different domestic species.
AU Spinu, Marina; Vasiu, C.; Dumitru, C.; Brudasca, F.; Boldizsar, E.; Dobrean, V.; Lates, C.
SO Branzas, P. [Editor]. (1996) pp. 167. Actualitati in patologia animalelor domestice: Referate, rezumate, postere. Current status in domestic animal pathology: Reports, summaries, posters.
Publisher: Universitatea de Stiinte Agricole si Medicina Veterinara Cluj, Romania.
Meeting Info.: 22nd Symposium of the Association of Romanian Veterinarians Cluj, Romania November 7-8, 1996 Association of Romanian Veterinarians . ISBN: 973-9243-04-5.
DT Conference
LA English

L2 ANSWER 8 OF 17 AGRICOLA DUPLICATE 1
AN 92:32753 AGRICOLA
DN IND92012765
TI The metabolism of [3-3H]oleanolic acid and its monoglycosides in cytoplasm and vacuole of protoplasts isolated from ***Calendula*** ***officinalis*** leaves.
AU Janiszowska, W.; Szakiel, A.
CS University of Warsaw, Warszawa, Poland
AV DNAL (450 P5622)
SO Phytochemistry, 1991. Vol. 30, No. 12. p. 3909-3912
Publisher: Oxford : Pergamon Press.
CODEN: PYTCAS; ISSN: 0031-9422
NTE Includes references.
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L2 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1990:412113 CAPLUS
DN 113:12113
TI Method of obtaining oleanolic acid and its salts from the marigold ***Calendula*** ***officinalis***
IN Wrzeciono, Urszula; Zaprutko, Lucjusz; Budzianowski, Jaromir; Jambor, Jerzy
PA Akademia Medyczna, Poznan, Pol.
SO Pol., 5 pp.
CODEN: POXXA7
DT Patent

LA Polish
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 141399	B1	19870731	PL 1984-247863	19840526

L2 ANSWER 10 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
AN 1985:429135 BIOSIS
DN BA80:99127
TI THE METABOLISM OF 3 TRITIUM-LABELED CARBON-14-LABELED OLEANOLIC-ACID-3-O-MONOGLUCOSIDE IN ISOLATED CELLS FROM ***CALENDULA*** - ***OFFICINALIS*** LEAVES.
AU AUGUSCINSKA E; SZAKIEL A; WILKOMIRSKI B; KASPRAZYK Z
CS INST. BIOCHEM., UNIV. WARSAW, 02-089 WARZAWA AL. ZWIRKI I WIGURY 93, POLAND.
SO PHYTOCHEMISTRY (OXF), (1985) 24 (8), 1713-1716.
CODEN: PYTCAS. ISSN: 0031-9422.
FS BA; OLD
LA English

=> d l2 11-17

L2 ANSWER 11 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1986:283964 BIOSIS
DN BA82:27827
TI DEVELOPMENT OF VIRESCENT CAPITULA AND CONVERSION OF FLORETS TO VEGETATIVE SHOOTS IN ***CALENDULA*** - ***OFFICINALIS*** .
AU RAO I U; RAM H Y M
CS DEP. OF BOTANY, UNIV. OF DELHI, DELHI 11007, DELHI.
SO PHYTOMORPHOLOGY, (1984 (1985) (RECD 1986)) 34 (1-4), 243-246.
CODEN: PHYMAW. ISSN: 0031-9449.
FS BA; OLD
LA English

L2 ANSWER 12 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 3
AN 1983:279554 BIOSIS
DN BA76:37046
TI INTRA CELLULAR LOCALIZATION OF LABELING OF TOCOPHEROLS WITH UNIFORMLY CARBON-14 LABELED TYROSINE IN ***CALENDULA*** - ***OFFICINALIS*** LEAVES.
AU JANISZOWSKA W; JASINSKA R
CS INST. OF BIOCHEM., UNIV. OF WARSAW, ZWIRKI I WIGURY 93 02-089 WARSZAWA, POLAND.
SO ACTA BIOCHIM POL, (1982 (RECD 1983)) 29 (1-2), 37-44.
CODEN: ABPLAF. ISSN: 0001-527X.
FS BA; OLD
LA English

L2 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1975:440207 CAPLUS
DN 83:40207
TI Free sterols, steryl esters, glucosides, acylated glucosides, and water-soluble complexes in ***Calendula*** ***officinalis***
AU Adler, Grazyna; Kasprzyk, Zofia

CS Dep. Biochem., Univ. Warszawa, Warsaw, Pol.
SO Phytochemistry (1975), 14(3), 627-31
CODEN: PYTCAS
DT Journal
LA English

L2 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1970:411411 CAPLUS
DN 73:11411
TI Variations of triterpenoids in germinating seeds of ***Calendula*** ***officinalis***
AU Kasprzyk, Zofia; Sliwowski, J.; Boleslawska-Kokosza, Dioniza
CS Dep. Biochem., Warsaw Univ., Warsaw, Poland
SO Acta Biochim. Pol. (1970), 17(1), 11-18
CODEN: ABPLAF
DT Journal
LA English

L2 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1970:19150 CAPLUS
DN 72:19150
TI Incorporation of acetate-1-14C into triterpenoids in ***Calendula*** ***officinalis***
AU Kasprzyk, Zofia; Wojciechowski, Zdzislaw
CS Univ. Warszawa, Warsaw, Poland
SO Phytochemistry (1969), 8(10), 1921-6
CODEN: PYTCAS
DT Journal
LA English

L2 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1967:46507 CAPLUS
DN 66:46507
TI Partial syntheses of dehydro carotenes. V. Dehydro carotenoid from .gamma.-carotene and rubixanthin palmitate
AU Bodea, Cornel; Neamtu, Gavril; Tamas, Virgil
CS Agr. Coll., Cluj, Rom.
SO Rev. Roum. Chim. (1966), 11(9), 1123-6
CODEN: RRCHAX
DT Journal
LA German

L2 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2002 ACS
AN 1964:93922 CAPLUS
DN 60:93922
OREF 60:16433a-b
TI Effect of caffeine on flowering of ***Calendula*** ***officinalis*** -a note
AU Verma, D. M.
CS Botan. Surv. India, Allahabad
SO Proc. Natl. Acad. Sci. India (1963), Sect. B 33(4), 570
DT Journal
LA Unavailable

=> d l2 1-5 ab

L2 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2002 ACS
AB Provided are insolated DNA vectors which may be based on Agrobacterium binary vectors. The present invention relates to recombinant, replicable, plant-viral based nucleic acid constructs, and methods of use thereof in silencing genes in plants. The vector comprising a plant active promoter, operably linked to a recombinant tobacco rattle virus (TRV) nucleic acid which may corresponds to all or part of TRV RNA 1. TRV RNA sequence encoding a TRV trans acting factor, and cis acting elements, which confer on the TRV nucleic acid transcript the ability to replicate in the cytoplasm of a plant cell, a heterologous nucleotide sequence which is foreign to said virus (which may be a cloning site, or a targeting sequence which is capable of down-regulating expression of a target gene); and a border sequences which permit the transfer of the transfer nucleotide sequence into a plant cell genome. Preferred vectors include pBTA.DELTA.MP.DELTA.16K or pBTA.DELTA.MP. Also provided are related materials and methods of use of such vectors e.g. to produce a cytoplasmically-replicating RNA which can be used to silence target genes in plants.

L2 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2002 ACS
AB This invention pertains to nucleic acid fragments encoding plant proteins that are homologs to the cis-prenyltransferases UPP synthase from the bacterium Micrococcus luteus or Dedol-PP synthase from yeast Saccharomyces cerevisiae. Amino acid and encoding cDNA sequences of cis-prenyltransferase homologs from wheat, grape, soybean, rice, African daisy, rubber tree latex and pot marigold are provided.
Transformation and expression of Hevea cis-prenyltransferase in dandelion plants, and expression of plant cis-prenyltransferase in Arabidopsis thaliana are disclosed.

L2 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2002 ACS
AB This invention relates to an isolated nucleic acid fragment encoding a PC4 transcription coactivator from corn, rice, soybean, wheat, marigold, and Vernonia. Specifically cDNA sequences of type 1 and type 2 PC4(P15) transcription coactivator which showed homol. with the corresponding proteins from Arabidopsis thaliana are provided. The invention also relates to the construction of a chimeric gene encoding all or a portion of the PC4 transcription coactivator, in sense or antisense orientation, wherein expression of the chimeric gene results in prodn. of altered levels of the PC4 transcription coactivator in a ***transformed*** host cell.

L2 ANSWER 4 OF 17 AGRICOLA
AB The green fluorescent protein gene (gfp) is a widely used reporter in both animals and plants. Fusions between the plastid rrn promoter or the Escherichia coli trc promoter and the gfp coding region have been delivered to chloroplasts using gold or tungsten microprojectiles, and fluorescence from GFP was visible in individual tobacco chloroplasts and in the abnormally large chloroplasts of the arc6 mutant of Arabidopsis thaliana 2-4 days after bombardment. The fusion of the gfp coding region to the bacterial trc promoter demonstrated that a bacterial promoter is active in chloroplasts in vivo. GFP was also detectable in amyloplasts of potato tubers and in chromoplasts of marigold petals, carrot roots and pepper fruits 4 days after bombardment. This demonstrates that GFP can be used as a reporter for transient gene expression in chloroplasts and in non-photosynthetic plastids in a range of higher plants.

L2 ANSWER 5 OF 17 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB The administrated extract determines, above all, the total consumption of glycogen in hepatocytes. We suppose that in strongly modified cells the glycogen synthesis cannot be resumed. The detoxification process determines the partial degradation, both of REG and mitochondria. The morphological integrity of the liver parenchyma cells demonstrates the conservation of the fibrillary proteins, which constitute the cellular cytoskeleton. Cells ***transformed*** in accumulation structures of disaggregated cellular materials, have still ribosomal granules, which offers them a relative possibility of recovery.

=> s marigold(w)transform?
L3 1 MARIGOLD(W) TRANSFORM?

=> d l3 1

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
AN 1999:764000 CAPLUS
DN 132:20488
TI Genes encoding epsilon lycopene cyclase and method for producing bicyclicepsilon carotene
IN Cunningham, Francis X., Jr.
PA The University of Maryland, USA
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9961399	A1	19991202	WO 1999-US10461	19990525
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002086380	A1	20020704	US 1998-84222	19980526
	CA 2329156	AA	19991202	CA 1999-2329156	19990525
	AU 9943084	A1	19991213	AU 1999-43084	19990525
	BR 9911597	A	20010213	BR 1999-11597	19990525
	EP 1080057	A1	20010307	EP 1999-953333	19990525
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002516077	T2	20020604	JP 2000-550811	19990525
PRAI	US 1998-84222	A	19980526		
	US 1996-624125	A3	19960329		
	US 1997-937155	A2	19970925		
	WO 1999-US10461	W	19990525		

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ALL CITATIONS AVAILABLE IN THE RE FORMAT

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FULL ESTIMATED COST                                        39.58      39.79

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LAST RELOADED: Oct  4, 2002 (20021004/UP).

=> s euphorbia(w)lagascae and transform?
             0 EUPHORBIA
             0 LAGASCAE
             0 EUPHORBIA(W)LAGASCAE
             0 TRANSFORM?
L4           0 EUPHORBIA(W)LAGASCAE AND TRANSFORM?

=> file agricola biosis embase caplus
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.18      39.97

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                           ENTRY    SESSION
CA SUBSCRIBER PRICE                                         0.00      -1.86

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=> s euphorbia(w)lagascae and transform?
L5           6 EUPHORBIA(W) LAGASCAE AND TRANSFORM?

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PROCESSING COMPLETED FOR L5
L6           4 DUPLICATE REMOVE L5 (2 DUPLICATES REMOVED)

=> d l6 1-4
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L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 2002:90087 CAPLUS
DN 136:147123
TI Identification and sequence of a cytochrome P 450 from ***Euphorbia*** ***lagascae*** associated with the synthesis of .DELTA.12-epoxy fatty acids of plants and its use for producing .DELTA.12-epoxy fatty acids in a host cell
IN Cahoon, Edgar B.
PA E. I. Du Pont de Nemours and Company, USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002008269	A2	20020131	WO 2001-US22790	20010719

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-219833P P 20000721

L6 ANSWER 2 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AN 2002:207701 BIOSIS
DN PREV200200207701
TI Transgenic production of epoxy fatty acids by expression of a cytochrome P450 enzyme from ***Euphorbia*** ***lagascae*** seed.
AU Cahoon, Edgar B. (1); Ripp, Kevin G.; Hall, Sarah E.; McGonigle, Brian
CS (1) Experimental Station, DuPont Crop Genetics, Wilmington, DE, 19880-0402: Edgar.B.Cahoon@usa.dupont.com USA
SO Plant Physiology (Rockville), (February, 2002) Vol. 128, No. 2, pp. 615-624. http://www.plantphysiol.org/. print.
ISSN: 0032-0889.
DT Article
LA English

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 1998:712360 CAPLUS
DN 129:328413
TI Genes for fatty acid .DELTA.12-epoxygenase of fatty acid epoxide-containing plants and the development of useful producers of fatty acid epoxides
IN Stymne, Sten; Green, Allan; Singh, Surinder; Lenman, Marit
PA Commonwealth Scientific and Industrial Research Organisation, Australia
SO PCT Int. Appl., 150 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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PI   WO 9846762          A1   19981022       WO 1998-AU246    19980409
         W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG,
             KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
             NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
             UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
             CM, GA, GN, ML, MR, NE, SN, TD, TG
     AU 9868135          A1   19981111       AU 1998-68135    19980409
     AU 734232           B2   20010607
     EP 975765           A1   20000202       EP 1998-913438   19980409
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     BR 9808676          A    20000711       BR 1998-8676     19980409
     JP 2001518797       T2   20011016       JP 1998-543302   19980409
     US 6329518          B1   20011211       US 1998-59769    19980414
PRAI AU 1997-6223        A    19970415
     AU 1997-6226        A    19970415
     US 1997-43706P      P    19970416
     US 1997-50403P      P    19970620
     WO 1998-AU246       W    19980409

L6   ANSWER 4 OF 4  EMBASE  COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 2
AN   93169015  EMBASE
DN   1993169015
TI   Microbial   ***transformation***   of (-)-vernolic acid into
     (4R,5R)-5-hydroxy-.gamma.-decalactone.
AU   Albrecht W.; Tressl R.
CS   Technische Universitat, Institut fur Biotechnologie, Fachgeb.
     Chemisch-Technische Analyse, Seestr. 13,1000 Berlin 65, Germany
SO   Tetrahedron Asymmetry, (1993) 4/6 (1391-1396).
     ISSN: 0957-4166  CODEN: TASYE3
CY   United Kingdom
DT   Journal; Article
FS   004     Microbiology
     029     Clinical Biochemistry
     037     Drug Literature Index
LA   English
SL   English


=> s Lunaria(w)biennis and transform?
L7            0 LUNARIA(W) BIENNIS AND TRANSFORM?

=> s coriander(w)sativum and transform?
L8            0 CORIANDER(W) SATIVUM AND TRANSFORM?

=> s euphorbia(w)lagascae and transform?
L9            6 EUPHORBIA(W) LAGASCAE AND TRANSFORM?

=> s euphorbia(w)lathyris and transform?
L10           4 EUPHORBIA(W) LATHYRIS AND TRANSFORM?

=> duplicate remove l10
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
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PROCESSING COMPLETED FOR L10
L11 4 DUPLICATE REMOVE L10 (0 DUPLICATES REMOVED)

=> d l11 1-4

L11 ANSWER 1 OF 4 AGRICOLA
AN 97:9004 AGRICOLA
DN IND20544788
TI ***Transformation*** of ***Euphorbia*** ***lathyris*** by Agrobacterium rhizogenes.
AU Cheetham, R.; Follansbee, E.; Weathers, P.
CS Worcester Polytechnic Institute, Worcester, MA.
AV DNAL (80 Ac82)
SO Acta horticulturae, Aug 1996. No. 426. p. 511-518
Publisher: Wageningen : International Society for Horticultural Science.
CODEN: AHORA2; ISSN: 0567-7572
NTE Paper presented at the International Symposium on Medicinal and Aromatic Plants, August 27-30, 1995, Amherst, Massachusetts.
Includes references
CY Netherlands
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 1997:212859 CAPLUS
DN 126:207916
TI ***Transformation*** of ***Euphorbia*** ***lathyris*** by Agrobacterium rhizogenes
AU Cheetham, R.; Follansbee, E.; Weathers, P.
CS Department of Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA, 01609, USA
SO Acta Horticulturae (1996), 426(International Symposium on Medicinal and Aromatic Plants, 1995), 511-518
CODEN: AHORA2; ISSN: 0567-7572
PB International Society for Horticultural Science
DT Journal
LA English

L11 ANSWER 3 OF 4 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 83228455 EMBASE
DN 1983228455
TI Chinese and African Euphorbiaceae plant extracts: Markedly enhancing effect on Epstein-Barr virus-induced ***transformation*** .
AU Mizuno F.; Koizumi S.; Osato T.; et al.
CS Dep. Virol., Cancer Inst., Hokkaido Univ. Sch. Med., Sapporo 060, Japan
SO Cancer Letters, (1983) 19/2 (199-205).
CODEN: CALEDQ
CY Ireland
DT Journal
FS 037 Drug Literature Index
016 Cancer
047 Virology
030 Pharmacology
LA English

L11 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1982:79320 BIOSIS
DN BR23:9312
TI TESTING FOR TUMOR PROMOTERS IN ***EUPHORBIA*** - ***LATHYRIS***
ANALYSIS OF POSSIBLE HEALTH HAZARDS.
AU BISSELL M J; NEMETHY E K; RIDDLE L; CALVIN M
CS LABORATORY CELL BIOL., DIV. BIOL. AND MED., AND MELVIN CALFIN LABORATORY,
LAWRENCE BERKELEY LABORATORY, UNIV. CALIF., BERKELEY, CALIF. 94720.
SO Bull. Environ. Contam. Toxicol., (1981) 27 (6), 894-902.
CODEN: BECTA6. ISSN: 0007-4861.
FS BR; OLD
LA English

=> s cuphea and transform?
L12 37 CUPHEA AND TRANSFORM?

=> duplicate remove l12
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L12
L13 33 DUPLICATE REMOVE L12 (4 DUPLICATES REMOVED)

=> d l13 1-5

L13 ANSWER 1 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 2002:601919 CAPLUS
DN 137:168396
TI Manufacture of alcohols with plant ***transformed*** with acyl
reductase gene
IN Kimura, Hiroshi
PA Kao Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002223788	A2	20020813	JP 2001-22823	20010131

L13 ANSWER 2 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 2001:265614 CAPLUS
DN 134:307217
TI Plant fatty acid desaturase Fad3 genes and transgenic plants with altered
fatty acid content
IN Somers, Daryl; Rakow, Gerhard
PA Canada, Minister of Agriculture and Agri-Food Canada, Can.
SO PCT Int. Appl., 114 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001025453	A2	20010412	WO 2000-CA1140	20000929

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1222290 A2 20020717 EP 2000-963841 20000929
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL
PRAI CA 1999-2284246 A 19991001
WO 2000-CA1140 W 20000929

L13 ANSWER 3 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 2001:863554 CAPLUS
DN 136:3165
TI Nucleotide sequences of maize and soybean .beta.-ketoacyl-acyl carrier protein synthase II and their use in the regulation of fatty acid content of oil
IN Rubin-Wilson, Beth C.; Young, Scott A.; Folkerts, Otto
PA Dow Agrosciences Llc, USA
SO U.S., 44 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323395	B1	20011127	US 1998-212609	19981216
US 1997-68784P	P	19971224		

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 2001:687491 CAPLUS
DN 135:252772
TI Production of hydroxylated fatty acids in genetically modified plants, especially oil-producing plant transgenosis using fatty acid hydroxylase gene
IN Somerville, Chris; Broun, Pierre; Van de Loo, Frank
PA Carnegie Institution of Washington, USA; Monsanto Company Inc.
SO U.S., 46 pp., Cont.-in-part of U.S. 5,801,026.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 7

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6291742	B1	20010918	US 1995-530862	19950920
US 5668292	A	19970916	US 1994-314596	19940926
US 5801026	A	19980901	US 1994-320982	19941011
CA 2200202	AA	19960404	CA 1995-2200202	19950925
JP 10506783	T2	19980707	JP 1995-511856	19950925
US 6310194	B1	20011030	US 1996-597313	19960206
US 5965793	A	19991012	US 1997-898038	19970718
US 6437220	B1	20020820	US 1999-352125	19990713
US 2002104125	A1	20020801	US 2001-885188	20010621

PRAI US 1994-314596 A2 19940926
US 1994-320982 A2 19941011
US 1995-530862 A 19950920
WO 1995-US11855 19950925
US 1996-597313 A2 19960206
WO 1997-US2187 A2 19970206
US 1997-898038 A1 19970718
RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 2001:166661 CAPLUS
DN 134:350690
TI Overexpression of 3-ketoacyl-acyl-carrier protein synthase IIIs in plants reduces the rate of lipid synthesis
AU Dehesh, Katayoon; Tai, Heeyoung; Edwards, Patricia; Byrne, James; Jaworski, Jan G.
CS Oils Division, Calgene, Davis, CA, 95616, USA
SO Plant Physiology (2001), 125(2), 1103-1114
CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Physiologists
DT Journal
LA English
RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l13 1-5 ab

L13 ANSWER 1 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB Alcs. are manufd. by redn. of aliph. acyl groups bonded to CoA and/or ACP via thioester bond, with acyl reductase in the presence of NADPH and/or NADH in plant ***transformed*** with the reductase gene and expressing the gene. Thus, pulverized germ of ***Cuphea*** calophilla was soaked in fermn. medium contg. Agrobacterium transfected with a plasmid carrying acyl CoA:alc. acyltransferase gene, acyltransferase gene, and acyl reductase, cultured on kanamycin-contg. MS medium, and the selected plant was further grown in a pot. The leaves and seeds were extd. to give C12-rich middle-chain alcs.

L13 ANSWER 2 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB In one aspect, the invention provides new variants of the Fad3 enzyme, including amino acid substitutions, as well as nucleic acid sequences encoding such peptides. Other aspects of the invention include transgenic plants and plant parts. Vectors capable of ***transforming*** plant cells are provided, including the nucleic acids of the invention, including Fad3 coding sequences. Corresponding methods are provided for obtaining the transgenic plants of the invention. Methods are provided for using the plants of the invention, including selected plants and transgenic plants, to obtain plant products. Amplification primers for identifying the Fad3 alleles of the invention are provided, together with methods of obtaining plants using the Fad3 alleles of the invention as markers.

L13 ANSWER 3 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding .beta.-Ketoacyl-Acyl Carrier Protein Synthase II have been isolated from maize and soybean tissues. These proteins, when expressed

in a plant, can alter the sat. levels of the oil. Thus, maize somatic embryos ***transformed*** with plasmid pDAB395 contg. the soybean kasII gene demonstrated oil contents with reduced levels of palmitic and stearic acids.

L13 ANSWER 4 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB This invention relates to plant fatty acyl hydroxylases. Methods to use conserved amino acid or nucleotide sequences to obtain plant fatty acyl hydroxylases are described. Also described is the use of cDNA clones encoding a plant hydroxylase to produce a family of hydroxylated fatty acids in transgenic plants. This invention relates to plant fatty acyl hydroxylases. Methods to use conserved amino acid or nucleotide sequences to obtain plant fatty acyl hydroxylases are described. Also described is the use of cDNA clones encoding a plant hydroxylase to produce a family of hydroxylated fatty acids in transgenic plants.

L13 ANSWER 5 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB A cDNA coding for 3-ketoacyl-acyl-carrier protein (ACP) synthase III (KAS III) from spinach (Spinacia oleracea; So KAS III) was used to isolate two closely related KAS III clones (Ch KAS III-1 and Ch KAS III-2) from ***Cuphea*** hookeriana. Both Ch KAS IIIs are expressed constitutively in all tissues examd. An increase in the levels of 16:0 was obsd. in tobacco (Nicotiana tabacum, WT-SR) leaves overexpressing So KAS III when under the control of the cauliflower mosaic virus-35S promoter and in Arabidopsis and rapeseed (Brassica napus) seeds overexpressing either of the Ch KAS IIIs driven by napin. These data indicate that this enzyme has a universal role in fatty acid biosynthesis, irresp. of the plant species from which it is derived or the tissue in which it is expressed. The transgenic rapeseed seeds also contained lower levels of oil as compared with the wild-type levels. In addn., the rate of lipid synthesis in transgenic rapeseed seeds was notably slower than that of the wild-type seeds. The results of the measurements of the levels of the acyl-ACP intermediates as well as any changes in levels of other fatty acid synthase enzymes suggest that malonyl-ACP, the carbon donor utilized by all of the 3-ketoacyl-ACP synthases, is limiting in the transgenic plants. This further suggests that malonyl-CoA is a potential limiting factor impacting the final oil content as well as further extension of 16:0.

=> d l13 6-10 ab

L13 ANSWER 6 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB The present invention provides protein and DNA sequences of Arabidopsis thaliana diacylglycerol acyltransferase (DGAT), which is a key enzyme for the biosynthesis of fatty acids that are channeled into the cytosolic acyl-CoA pool to sustain triacylglycerol accumulation. The invention includes isolated and purified DGAT DNA, and methods of regulating seed oil content, the ratio of diacylglycerol/triacylglycerol proportions in the seed oil, fatty acid synthesis, seed oil acyl compn., seed size/wt. and carbon flux into other seed components, using the gene, and to tissues and plants ***transformed*** with the gene. The invention also relates to transgenic plants, plant tissues and plant seeds having a genome contg. an introduced DNA sequence of the invention, and a method of producing such plants and plant seeds. The invention further relates to the uses of DGAT in modifying the natural formation of triacylglycerols in plants in order to increase the yield of com. plant oils, or to modify their compn. to achieve specific com. improvements of plants and plant

products.

L13 ANSWER 7 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB Methods of altering substrate specificity of plant acyl-ACP thioesterases, and engineered plant acyl-ACP thioesterases so produced are provided. Novel plant acyl-ACP thioesterase sequences are provided from ***Cuphea*** palustris and mangosteen (Garcinia mangifera). The C. palustris sequence, CpFATB1, demonstrates substrate specificity towards C8 and C10 fatty acyl-ACPs with higher activity on C8. A mangosteen thioesterase gene, GarmFatA1, demonstrates primary activity on 18:1-ACP substrates, but also demonstrates substantial activity on 18:0-ACP, but does no demonstrate specificity for 16:0 substrates. The C-terminal two-thirds portion of plant thioesterases is identified as desirable for modifications. DNA sequences and constructs for expression of engineered thioesterases, as well as the novel thioesterases produced therefrom are also provided. Such DNA sequences may be used for expression of the engineered thioesterases in host cells, particularly seed cells of oilseed crop plants, for the modification of fatty acid compn. Of particular interest is a mangosteen Garm FatA1 18:1 thioesterase in which the relative 18:0 activity has been increased. Such FatA thioesterases find use for improved prodn. of stearate in vegetable seed oils.

L13 ANSWER 8 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB This invention relates to plant thioesterases, means to identify such proteins, amino acid and nucleic acid sequences assocd. with such protein, methods to obtain, make and/or use such plant thioesterases. The plant thioesterases exemplified herein include a C10-preferring thioesterase from Umbellularia californica (Bay), a C10-preferring acyl-ACP thioesterase from ***Cuphea*** hookeriana, a C18:1-preferring acyl-ACP thioesterase from Carthamus inctorius (safflower), and a thioesterase from Cinnamomum camphora (camphor). Also, by this invention, the existence of a heretofore unproven factor crit. to the biosynthesis of medium-chain fatty acids in plants is demonstrated.

L13 ANSWER 9 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB The compn. and positional distribution of lipids in developing and mature transgenic Brassica napus seeds accumulating up to 7 mol% of caprylate (8:0), 29 mol% caprate (10:0) or 63 mol% of laurate (12:0) were examd. The accumulation of 8:0 and 10:0 resulted from over-expression of the medium-chain-specific thioesterase (Ch FatB2) alone or together with the resp. chain-length-specific condensing enzyme (Ch KASIV). Seeds contg. high levels of 12:0 were obtained from plants expressing bay thioesterase (BTE) alone or crossed with a line over-expressing the coconut lysophosphatidic acid acyltransferase (LPAAT), an enzyme responsible for the increase in acylation of 12:0 at the sn-2 position. In all instances, 10:0 and 12:0 fatty acids were present in substantial amts. in phosphatidylcholine during seed development with a drastic decrease of 80-90% in mature seeds. At all stages of seed development however, 8:0 was barely detectable in this membrane lipid. Altogether, these results indicate that these transgenic seeds exclude and/or remove the medium-chain fatty acids from their membrane and that this mechanism(s) is more effective with the shorter-chain fatty acids. Furthermore, seeds of 8:0- and 10:0-producing lines had only negligible levels of these fatty acids present in the sn-2 position of the triacylglycerols. In contrast, all 12:0-producing seeds had a substantial amt. of this fatty acid in the sn-2 position of the triacylglycerols, suggesting that the endogenous LPAAT is able to acylate 12:0 if no other acyl-CoA species are available.

L13 ANSWER 10 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB The gene encoding a palmitoyl-CoA .DELTA.9-desaturase is isolated and cloned from Aspergillus nidulans. When expressed in a plant, this enzyme can alter the sat. levels of the oil produced by the plant. The open reading frame of the Aspergillus enzyme is cloned in plasmid pDAB439 between the ubiquitin promoter/intron and Nos terminator. Optimal expression of the heterologous gene in maize is achieved by (1) reengineering the gene sequence based on preferred codon usage in maize and (2) replacing the ubiquitin promoter/intron in pDAB463 with the promoter of the maize globulin gene. In order to express the gene in a seed-specific manner, the Aspergillus desaturase is placed behind the phaseolin promoter from Phaseolus vulgaris. Fatty acid 16:1.DELTA.9 is identified in an ext. from a ***transformed*** maize seed embryo.

=> d l13 11-15 ab

L13 ANSWER 11 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB CDNAs encoding soybean seed acyl-ACP thioesterase enzyme are characterized for use in the modification of plant oil compn. The thioesterases identified cleave palmitic, stearic, or oleic acids from ACP. Chimeric genes incorporating such nucleic acid fragments and suitable regulatory sequences may be used to ***transform*** plants to control the levels of satd. and unsatd. fatty acids. Purifn. of the enzyme and the cloning of cDNAs by screening a seed cDNA bank with amino acid sequence-derived probes are described. The construction of sense and antisense expression constructs for one of the soybean cDNAs is described. The soybean cDNAs are used as probes to identify clones for the enzyme from Brassica and ***Cuphea*** .

L13 ANSWER 12 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding acyl-acyl carrier protein thioesterases have been cloned from maize. These genes, when expressed in a plant, can be used to create transgenic plants having altered oil profiles. A cDNA for the palmitoyl-ACP thioesterase was cloned from a corn kernel cDNA library by PCR and expressed in Escherichia coli using the PET-2b system. The enzyme manufd. in Escherichia coli was active against a broad range of fatty acid thioesters with acyl carrier protein but was most active against palmitoyl-ACP and more active against C18 fatty acyl ACP than C14 fatty acyl ACP. Expression vectors using a seed-specific corn globulin promoter were used to drive expression of the gene in transgenic corn. ***Transformed*** plants showed alterations in the fatty acid profile of the seed oil including an overall drop in C16 fatty acids.

L13 ANSWER 13 OF 33 CAPLUS COPYRIGHT 2002 ACS
AB The present invention relates to the identification of nucleic acid sequences and constructs, and methods related thereto, and the use of these sequences and constructs to produce genetically modified plants for the purpose of altering the compn. of plant oils, waxes, and related compds. A cDNA clone encoding a fatty acid 12-hydroxylase was isolated and sequenced from castor (Ricinus communis). Northern and Southern blot analyses indicated that the gene (fah12) is highly and specifically expressed in seed of castor, and that at lease one similar gene exists in castor and Arabidopsis thaliana. Transgenic tobacco and Arabidopsis exhibited increased levels of seed-specific ricinoleic acid. Thus, the

hydroxylase can be expressed in heterologous plant species and its expression leads to accumulation of ricinoleate in a plant species that does not normally accumulated hydroxylated fatty acids in extractable lipids.

L13 ANSWER 14 OF 33 AGRICOLA DUPLICATE 1

AB Acyl-acyl carrier protein (ACP) thioesterases with specificities on medium chain substrates (C8-C14) are requisite enzymes in plants that produce 8:0, 10:0, 12:0 and 14:0 seed oils, but they may not be the sole enzymatic determinants of chain length. The contribution to chain length regulation of a beta-ketoacyl-ACP synthase, Cw KAS A1, derived from ***Cuphea*** wrightii, a species that accumulates 30% 10:0 and 54% 12:0 in seed oils, was investigated. Expression of Cw KAS A1 in Arabidopsis seeds reduced 16:0 from 8.2 to 6.2 mol%, suggesting a KAS II-type activity. In the presence of the KAS I inhibitor cerulenin, however, transgenic seed extracts extended 6:0- and 8:0-ACP at a rate four- to fivefold greater than extracts from untransformed plants, whereas no difference was observed in extension of 14:0- and 16:0-ACP. The effect of KAS A1 on seed oils was tested by combining it with the C. wrightii medium chain-specific thioesterases, Cw FatB1 and Cw FatB2, in crosses of ***transformed*** plants. Fatty acid synthesis shifted towards shorter chains in progeny expressing both classes of enzymes. KasA1/FatB1 homozygotes produced threefold more 12:0 than the FatB1 parent while 14:0 and 16:0 were reduced by one-third and one-half, respectively. F2 progeny expressing KasA1 and FatB2 produced twofold more 10:0 and 1.4-fold more 12:0 than the FatB2 parent, and the double-transgenic progeny produced one-quarter less 14:0 and one-half less 16:0 than the FatB2 parent. It is hypothesized that the shift towards production of shorter chains resulted from increased pools of medium chain acyl-ACP resulting from KAS A1 activity. The combined activities of KAS A1 and FatB thioesterases appear to determine the C. wrightii phenotype.

L13 ANSWER 15 OF 33 CAPLUS COPYRIGHT 2002 ACS

AB Methods of using ribozymes to control gene expression in plants are described. Ribozymes aimed at the granule-bound starch synthase and .DELTA.9 desaturase are described for use in the modulation of carbohydrate and fatty acid metab. Potential ribozyme cleavage sites in the mRNAs for the two enzymes were identified by examg. their sequences and a no. of these sites were tested using an in vitro RNAse H assay. Hammerhead and hairpin enzymes were prepd. against the best candidate sites. Corn callus was ***transformed*** with expression constructs and callus and transgenic plants regenerated. Plants expressing the .DELTA.9 desaturase ribozyme gene showed decreased levels of the desaturase mRNA, although the gene was still being transcribed, and increased levels of stearic acid in leaf.

=> d l13 16-33

L13 ANSWER 16 OF 33 CAPLUS COPYRIGHT 2002 ACS

AN 1997:527794 CAPLUS

DN 127:186625

TI Production of myristate in glyceridic oils in plant cells expressing foreign acyl-[acyl carrier protein] thioesterase genes

IN Voelker, Toni Alois; Davies, Huw Maelor

PA Calgene, Inc., USA

SO U.S., 53 pp., Cont.-in-part of U.S. 5,455,167.

CODEN: USXXAM
DT Patent
LA English
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5654495	A	19970805	US 1995-383756	19950202
	US 5455167	A	19951003	US 1992-968971	19921030
	GB 2267288	A1	19931201	GB 1993-10843	19930526
	GB 2267288	B2	19951206		
	WO 9324859	A1	19931209	WO 1993-GB1083	19930526
	W: JP, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 642678	A1	19950315	EP 1993-910286	19930526
	R: DE, FR, GB, IT, NL				
	JP 07507338	T2	19950810	JP 1993-500320	19930526
	US 5850022	A	19981215	US 1995-460898	19950605
	CA 2212003	AA	19960808	CA 1996-2212003	19960201
	WO 9623892	A2	19960808	WO 1996-US1585	19960201
	WO 9623892	A3	19961205		
	W: CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 807182	A2	19971119	EP 1996-909479	19960201
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	JP 11500902	T2	19990126	JP 1996-523784	19960201
PRAI	US 1992-968971	A2	19921030		
	US 1994-261695	A2	19940616		
	US 1991-704861	B2	19910521		
	US 1991-773096	B2	19911007		
	US 1991-782263	B2	19911024		
	US 1992-824247	A2	19920122		
	GB 1992-11238	A	19920527		
	WO 1993-GB1083	W	19930526		
	US 1995-383756	A2	19950202		
	US 1995-460898	A	19950605		
	WO 1996-US1585	W	19960201		

L13 ANSWER 17 OF 33 AGRICOLA DUPLICATE 2
AN 1998:51741 AGRICOLA
DN IND20629279
TI ***Cuphea*** wrightii thioesterases have unexpected broad specificities on saturated fatty acids.
AU Leonard, J.M.; Slabaugh, M.B.; Knapp, S.J.
AV DNAL (QK710.P62)
SO Plant molecular biology, July 1997. Vol. 34, No. 4. p. 669-679
Publisher: Dordrecht : Kluwer Academic Publishers.
CODEN: PMBIDB; ISSN: 0167-4412
NTE Includes references
CY Netherlands
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L13 ANSWER 18 OF 33 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:154871 BIOSIS
DN PREV199800154871
TI Altered seed oil quality due to gene transfer from ***Cuphea***

lanceolata: First results of the field release.
AU Rudloff, Eicke; Wehling, Peter
CS Bundesanstalt Zuechtungsforschung Kulturpflanzen, Inst. Zuechtung Landwirtschaftlicher Kulturpflanzen, Institutsplatz 1, 18190 Gross Luesewitz Germany
SO Schriftenreihe des Bundesministeriums fuer Ernaehrung Landwirtschaft und Forsten Reihe A Angewandte Wissenschaft, (1997) No. 465, pp. 361-362. Meeting Info.: Symposium of the Work Group Ecosystems/Resources of the Senate of the Federal Research Institutes of the German Federal Ministry for Food, Agriculture and Forestry on Biological Diversity in Ecosystems: Conflict Between Utilization and Conservation Braunschweig-Voelkenrode, Germany April 22-24, 1997
ISSN: 0723-7847.
DT Conference
LA German

L13 ANSWER 19 OF 33 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:154847 BIOSIS
DN PREV199800154847
TI Biodiversity and renewable resources in the fats and oils area.
AU Aitzetmueller, Kurt (1)
CS (1) BAGKF, Piusallee 76, 48147 Muenster Germany
SO Schriftenreihe des Bundesministeriums fuer Ernaehrung Landwirtschaft und Forsten Reihe A Angewandte Wissenschaft, (1997) No. 465, pp. 302-304. Meeting Info.: Symposium of the Work Group Ecosystems/Resources of the Senate of the Federal Research Institutes of the German Federal Ministry for Food, Agriculture and Forestry on Biological Diversity in Ecosystems: Conflict Between Utilization and Conservation Braunschweig-Voelkenrode, Germany April 22-24, 1997
ISSN: 0723-7847.
DT Conference
LA German

L13 ANSWER 20 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1997:69855 CAPLUS
DN 126:85634
TI Modification of plant lipids and seed oils utilizing yeast SLC genes encoding sn-2 acyltransferases
IN Zou, Jitao; Taylor, David C.; Katavic, Vesna; MacKenzie, Samuel L.; Keller, Wilfred A.
PA National Research Council of Canada, Can.; Zou, Jitao; Taylor, David C.; Katavic, Vesna; Mackenzie, Samuel L.; Keller, Wilfred A.
SO PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9638573	A1	19961205	WO 1996-CA350	19960531
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR				
	CA 2224470	AA	19961205	CA 1996-2224470	19960531

	AU 9658071	A1	19961218	AU 1996-58071	19960531
	AU 706507	B2	19990617		
	EP 832262	A1	19980401	EP 1996-919503	19960531
	R: BE, DE, DK, ES, FR, GB, GR, IT, NL, SE, PT				
	JP 11506323	T2	19990608	JP 1996-536056	19960531
	BR 9608693	A	19991207	BR 1996-8693	19960531
	PL 183005	B1	20020531	PL 1996-323784	19960531
	US 6051755	A	20000418	US 1997-973353	19971128
PRAI	GB 1995-10927	A	19950531		
	WO 1996-CA350	W	19960531		

L13 ANSWER 21 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1996:584129 CAPLUS
DN 125:217224
TI Manufacture of myristate-containing glycerides in plants expressing foreign acyl-ACP thioesterase genes
IN Dehesh, Katayoon; Voelker, Toni Alois; Hawkins, Deborah
PA Calgene, Inc., USA
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9623892	A2	19960808	WO 1996-US1585	19960201
	WO 9623892	A3	19961205		
	W: CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	GB 2267288	A1	19931201	GB 1993-10843	19930526
	GB 2267288	B2	19951206		
	WO 9324859	A1	19931209	WO 1993-GB1083	19930526
	W: JP, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 642678	A1	19950315	EP 1993-910286	19930526
	R: DE, FR, GB, IT, NL				
	JP 07507338	T2	19950810	JP 1993-500320	19930526
	US 5654495	A	19970805	US 1995-383756	19950202
	US 5850022	A	19981215	US 1995-460898	19950605
	EP 807182	A2	19971119	EP 1996-909479	19960201
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	JP 11500902	T2	19990126	JP 1996-523784	19960201
PRAI	US 1995-383756	A	19950202		
	US 1995-460898	A	19950605		
	GB 1992-11238	A	19920527		
	US 1992-968971	A2	19921030		
	WO 1993-GB1083	W	19930526		
	US 1994-261695	A2	19940616		
	WO 1996-US1585	W	19960201		

L13 ANSWER 22 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1996:371908 CAPLUS
DN 125:50762
TI Production of hydroxylated fatty acids in genetically modified plants, especially oil-producing plant transgenosis using fatty acid hydroxylase gene
IN Somerville, Chris; Broun, Pierre; Van De Loo, Frank J.

PA USA
SO PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9610075	A1	19960404	WO 1995-US11855	19950925
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5668292	A	19970916	US 1994-314596	19940926
	US 5801026	A	19980901	US 1994-320982	19941011
	CA 2200202	AA	19960404	CA 1995-2200202	19950925
	AU 9536778	A1	19960419	AU 1995-36778	19950925
	AU 718512	B2	20000413		
	EP 781327	A1	19970702	EP 1995-934442	19950925
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	JP 10506783	T2	19980707	JP 1995-511856	19950925
PRAI	US 1994-314596	A	19940926		
	US 1994-320982	A	19941011		
	US 1995-530862	A	19950920		
	WO 1995-US11855		19950925		

L13 ANSWER 23 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1996:447126 CAPLUS
DN 125:108879
TI The nucleotide sequences of soybean acyl-ACP thioesterase cDNAs and their use in the alteration of plant fatty acid profiles
IN Hitz, William D.; Yadav, Narendra S.
PA E. I. Du Pont De Nemours and Company, USA
SO U.S., 35 pp., Cont.-in-part of U.S. Ser. No. 631,264, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5530186	A	19960625	US 1993-75533	19930614
	WO 9211373	A1	19920709	WO 1991-US9160	19911216
	W: AU, BR, CA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	US 5945585	A	19990831	US 1997-948176	19971009
PRAI	US 1990-631264		19901220		
	WO 1991-US9160		19911216		
	US 1993-75533		19930614		
	US 1995-570925		19951212		

L13 ANSWER 24 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1996:208081 CAPLUS
DN 125:4157
TI Production of high levels of 8:0 and 10:0 fatty acids in transgenic canola by overexpression of Ch FatB2, a thioesterase cDNA from ***Cuphea*** hookeriana
AU Dehesh, Katayoon; Jones, Aubrey; Knutzon, Deborah S.; Voelker, Toni A.
CS Oils Division, Calgene Inc., Davis, CA, 95616, USA
SO Plant Journal (1996), 9(2), 167-72

CODEN: PLJUED; ISSN: 0960-7412
PB Blackwell
DT Journal
LA English

L13 ANSWER 25 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1995:559983 CAPLUS
DN 122:283871
TI Promoters and other regulatory elements for transfer of genes encoding fatty acid-synthesizing proteins to plants
IN Toepfer, Reinhard; Bautor, Jaqueline; Bothmann, Hendrick; Filsak, Elke; Hoericke-Granpierre, Christa; Klein, Barbara; Martini, Norbert; Mueller, Andreas; Schulte, Wolfgang; et al.
PA Max-Planck-Gesellschaft zur Foerderung der Wissenschaftin, Germany
SO PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9507357	A2	19950316	WO 1994-EP2950	19940905
	WO 9507357	A3	19950713		
	W: AU, CA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2169093	AA	19950316	CA 1994-2169093	19940905
	AU 9476154	A1	19950327	AU 1994-76154	19940905
	AU 695775	B2	19980820		
	EP 716707	A1	19960619	EP 1994-926238	19940905
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	US 6133506	A	20001017	US 1996-617860	19960523
PRAI	DE 1993-4329951	A	19930904		
	WO 1994-EP2950	W	19940905		

L13 ANSWER 26 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1995:701904 CAPLUS
DN 123:78429
TI Medium chain-specific acyl-[ACP] thioesterases from ***Cuphea*** lanceolata and the genes encoding them and their uses in altering fatty acid profiles
IN Toepfer, Reinhard; Martini, Norbert; Schell, Jozef
PA Max-Planck-Gesellschaft zur Foerderung der Wissenschaften E.V., Germany
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9506740	A2	19950309	WO 1994-EP2935	19940902
	WO 9506740	A3	19950622		
	W: AU, CA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2169094	AA	19950309	CA 1994-2169094	19940902
	AU 9477398	A1	19950322	AU 1994-77398	19940902
	AU 688377	B2	19980312		
	EP 716708	A1	19960619	EP 1994-928311	19940902

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
US 5910631 A 19990608 US 1996-605106 19960923
PRAI DE 1993-4329828 19930903
WO 1994-EP2935 19940902

L13 ANSWER 27 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1995:780303 CAPLUS
DN 123:164069
TI A glycerol phosphate-dehydrogenase from ***Cuphea*** lanceolata and the gene encoding it and its uses
IN Toepfer, Reinhard; Hausmann, Luedger; Schell, Jozef
PA Max-Planck-Gesellschaft zur Foerderung der Wissensc aften E.V., Germany
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9506733	A2	19950309	WO 1994-EP2936	19940902
WO 9506733	A3	19950420		
W: AU, CA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2170611	AA	19950309	CA 1994-2170611	19940902
AU 9476938	A1	19950322	AU 1994-76938	19940902
AU 680551	B2	19970731		
EP 716699	A1	19960619	EP 1994-927553	19940902
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
US 6103520	A	20000815	US 1996-605150	19960619
PRAI DE 1993-4329827	A	19930903		
WO 1994-EP2936	W	19940902		

L13 ANSWER 28 OF 33 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:44639 BIOSIS
DN PREV199698616774
TI Modification of fatty acid composition in the storage oil of transgenic rapeseed.
AU Martini, N. (1); Hemmann, G. (1); Eckstein, L. (1); Mueller, A. (1); Dettendorfer, J. (1); Schell, J. (1); Toepfer, R.
CS (1) Max-Planck-Inst. Zuechtungsforschung, Carl-von-Linne-Weg 10, D-50829 Koeln Germany
SO Biological Chemistry Hoppe-Seyler, (1995) Vol. 376, No. SPEC. SUPPL., pp. S55.
Meeting Info.: 118th Conference of the Gesellschaft fuer Biologische Chemie: 10th Minisymposium and Workshop on Plant Lipids Bern, Switzerland September 3-6, 1995
ISSN: 0177-3593.
DT Conference
LA English

L13 ANSWER 29 OF 33 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:44627 BIOSIS
DN PREV199698616762
TI Promoters of genes encoding enzymes for de novo fatty acid biosynthesis in ***Cuphea*** lanceolata.
AU Hemmann, G. (1); Martini, N. (1); Klein, B. (1); Reintanz, B. (1); Mueller, A. (1); Dettendorfer, J. (1); Schell, J. (1); Toepfer, R.

CS (1) Max-Planck-Inst. Zuechtungsforschung, Carl-von-Linne-Weg 10, D-50829 Koeln Germany
SO Biological Chemistry Hoppe-Seyler, (1995) Vol. 376, No. SPEC. SUPPL., pp. S52.
Meeting Info.: 118th Conference of the Gesellschaft fuer Biologische Chemie: 10th Minisymposium and Workshop on Plant Lipids Bern, Switzerland September 3-6, 1995
ISSN: 0177-3593.
DT Conference
LA English

L13 ANSWER 30 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1994:572263 CAPLUS
DN 121:172263
TI Medium-chain acyl ACP thioesterase cDNA of plants and production of medium-chain fatty acids in plants
IN Voelker, Toni Alois; Davies, Huw Maelor; Knutzon, Deborah S.
PA Calgene, Inc., USA
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9410288	A2	19940511	WO 1993-US10814	19931029
	W: CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5455167	A	19951003	US 1992-968971	19921030
	GB 2267288	A1	19931201	GB 1993-10843	19930526
	GB 2267288	B2	19951206		
	WO 9324859	A1	19931209	WO 1993-GB1083	19930526
	W: JP, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 642678	A1	19950315	EP 1993-910286	19930526
	R: DE, FR, GB, IT, NL				
	JP 07507338	T2	19950810	JP 1993-500320	19930526
	EP 670903	A1	19950913	EP 1994-901358	19931029
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	JP 08502892	T2	19960402	JP 1993-511456	19931029
	US 5667997	A	19970916	US 1995-424406	19950705
PRAI	US 1992-968971	A	19921030		
	US 1991-704861	B2	19910521		
	US 1991-773096	B2	19911007		
	US 1991-782263	B2	19911024		
	US 1992-824247	A2	19920122		
	GB 1992-11238	A	19920527		
	WO 1993-GB1083	W	19930526		
	WO 1993-US10814	W	19931029		

L13 ANSWER 31 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1994:624990 CAPLUS
DN 121:224990
TI Plant fatty acid synthases and the genes encoding and their use in the alteration of plant fatty acid profiles
IN Knauf, Vic C.; Thompson, Gregory A.
PA Calgene, Inc., USA

SO PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9410189	A1	19940511	WO 1993-US10526	19931102
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2148358	AA	19940511	CA 1993-2148358	19931102
	EP 666865	A1	19950816	EP 1994-900499	19931102
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08502891	T2	19960402	JP 1993-511393	19931102
PRAI	US 1992-971182		19921102		
	WO 1993-US10526		19931102		

L13 ANSWER 32 OF 33 CAPLUS COPYRIGHT 2002 ACS
AN 1992:145466 CAPLUS
DN 116:145466
TI Cloning and expression of plant thioesterase cDNA and preparation of glyceridic oils with altered fatty acid composition
IN Davies, Huw Maelor; Pollard, Michael Roman; Voelker, Toni Alois; Thompson, Gregory A.
PA Calgene, Inc., USA
SO PCT Int. Appl., 144 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9116421	A1	19911031	WO 1991-US2960	19910425
	W: CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5298421	A	19940329	US 1990-620426	19901130
	US 5344771	A	19940906	US 1991-662007	19910227
	EP 480024	A1	19920415	EP 1991-911522	19910425
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05507199	T2	19931021	JP 1991-510152	19910425
	GB 2267288	A1	19931201	GB 1993-10843	19930526
	GB 2267288	B2	19951206		
	WO 9324859	A1	19931209	WO 1993-GB1083	19930526
	W: JP, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 642678	A1	19950315	EP 1993-910286	19930526
	R: DE, FR, GB, IT, NL				
	JP 07507338	T2	19950810	JP 1993-500320	19930526
	US 6028247	A	20000222	US 1995-470204	19950606
PRAI	US 1990-514030	A2	19900426		
	US 1990-620426	A2	19901130		
	US 1991-662007	A2	19910227		
	WO 1991-US2960	W	19910425		
	US 1991-704861	B2	19910521		
	US 1991-773096	B2	19911007		
	US 1991-782263	B2	19911024		
	US 1992-824247	A2	19920122		

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     GB 1992-11238      A     19920527
     WO 1993-GB1083     W     19930526

L13  ANSWER 33 OF 33  CAPLUS  COPYRIGHT 2002 ACS
AN   1992:52949  CAPLUS
DN   116:52949
TI   Cloning of plant desaturase cDNA and its expression in transgenic plants
IN   Thompson, Gregory A.; Knauf, Vic C.
PA   Calgene, Inc., USA
SO   PCT Int. Appl., 130 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 4
     PATENT NO.         KIND  DATE           APPLICATION NO.   DATE
     ---------------    ----  --------       ---------------   --------
PI   WO 9113972         A1    19910919       WO 1991-US1746    19910314
         W:  CA, JP, US
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE
     EP 472722          A1    19920304       EP 1991-907317    19910314
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE
     US 6117677         A     20000912       US 1992-979461    19921120
     US 5723595         A     19980303       US 1995-471791    19950606
     US 6426447         B1    20020730       US 1997-926522    19970909
PRAI US 1990-494106     A2    19900316
     US 1990-567373     A     19900813
     US 1990-615784     A     19901114
     WO 1991-US1746     W     19910314
     US 1991-762761     A1    19910626
     WO 1991-US5801     W     19910815
     US 1992-949102     A2    19920921
     US 1995-458173     B1    19950602


=> s dimorphotheca(W)pluvialis and transform?
L14           0 DIMORPHOTHECA(W) PLUVIALIS AND TRANSFORM?

=> s lesquerella(w)grandiflora and transform?
L15           0 LESQUERELLA(W) GRANDIFLORA AND TRANSFORM?

=> s limnathes(w)alba and transform?
L16           0 LIMNATHES(W) ALBA AND TRANSFORM?

=> s limnanthes(w)alba and transform?
L17           4 LIMNANTHES(W) ALBA AND TRANSFORM?

=> d l17 1-4 ab

L17  ANSWER 1 OF 4  AGRICOLA
AB   Lysophosphatidic acid acyltransferase acylates the sn-2 hydroxyl group of
     lysophosphatidic acid to form phosphatidic acid, a precursor to
     triacylglycerol. A cDNA encoding lysophosphatidic acid acyltransferase was
     isolated from developing seeds of meadowfoam (  ***Limnanthes***
       ***alba***   alba). The cDNA encodes a 281-amino acid protein with a
     molecular mass of 32 kD. The cDNA was expressed in developing seeds of
     transgenic high-erucic-acid rapeseed (Brassica napus) using a napin
     expression cassette. Erucic acid was present at the sn-2 position of
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triacylglycerols from transgenic plants but was absent from that position of seed oil extracted from control plants. Trierucin was present in the transgenic oil. Alteration of the sn-2 erucic acid composition did not affect the total erucic acid content. These experiments demonstrate the feasibility of using acyltransferases to alter the stereochemical composition of transgenic seed oils and also represent a necessary step toward increasing the erucic acid content of rapeseed oil.

L17 ANSWER 2 OF 4 AGRICOLA
AB Methyl esters of cis-5-eicosenoic (5-EAME) and cis-11-eicosenoic (11-EAME) acids from the seed oil of ***Limnanthes*** ***alba*** (Meadowfoam) exhibit a degree of thermotropic polymorphism unobserved with shorter and longer chainlength monoenoic methyl esters. 5-EAME freezes at 264 K and melts at 266 K if cooled no lower than 215 K. 11-EAME freezes at 239 K and melts at 255 K if cooled at no lower than 240 K. Solids cooled to lower temperatures undergo phase ***transformation*** to higher-melting polymorphs (274 K, 5-EAME; 262 K, 11-EAME), and samples often exhibit double melting endotherms. Quantities of each high-melting phase vary with time at temperatures below characteristic initiation temperatures. Highly temperature-sensitive phase conversions suggest low temperature nucleation, followed by crystal growth and conversion, as reheating allows molecular motion. Once formed, both high-melting phases melt with essentially the same melting entropy. Thermodynamic and kinetic analyses imply that differences exhibited by the isomeric esters derive from aliphatic configuration distal to the double bond.

L17 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
AB Estolides were produced from meadowfoam oil fatty acids: oleic, linoleic, petroselinic, and cis-5-cis-13-docosadienoic acids. Estolide reaction mixts. were quantitated by Fourier ***transform*** IR spectroscopy and compared to the area percentages detd. by high-performance liq. chromatog. The absorbance frequency of estolide carbonyl (1737 cm-1) is different than the lactone carbonyl (1790 cm-1) and the acid carbonyl (1712 cm-1). Estolide stds. were obtained by wiped-film mol.-still distns. and column chromatog.

L17 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS
AB Me esters of cis-5-eicosenoic (5-EAME) and cis-11-eicosenoic (11-EAME) acids from the seed oil of ***Limnanthes*** ***alba*** (meadowfoam) exhibit a degree of thermotropic polymorphism unobserved with shorter and longer chain length monoenoic Me esters. 5-EAME freezes at 264 K and melts at 266 K if cooled no lower than 215 K. 11-EAME freezes at 239 K and melts at 255 K if cooled at no lower than 240 K. Solids cooled to lower temps. undergo phase ***transformation*** to higher-melting polymorphs (274 K, 5-EAME; 262 K, 11-EAME), and samples often exhibit double melting endotherms. Quantities of each high-melting phase vary with time at temps. below characteristic initiation temps. Highly temp.-sensitive phase conversions suggest low temp. nucleation, followed by crystal growth and conversion, as reheating allows mol. motion. Once formed, both high-melting phases melt with essentially the same melting entropy. Thermodn. and kinetic analyses imply that differences exhibited by the isomeric esters derive from aliph. configuration distal to the double bond.

=> d Linum(w)usitatissimum nd transform?
'LINUM(W)USITATISSIMUM' IS NOT A VALID FORMAT

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'TRANSFORM?' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid
in at least one of the files. Refer to file specific help messages
or the STNGUIDE file for information on formats available in
individual files.
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or the STNGUIDE file for information on formats available in
individual files.
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L17 ANSWER 1 OF 4 AGRICOLA
AB Lysophosphatidic acid acyltransferase acylates the sn-2 hydroxyl group of lysophosphatidic acid to form phosphatidic acid, a precursor to triacylglycerol. A cDNA encoding lysophosphatidic acid acyltransferase was isolated from developing seeds of meadowfoam (***Limnanthes*** ***alba*** alba). The cDNA encodes a 281-amino acid protein with a molecular mass of 32 kD. The cDNA was expressed in developing seeds of transgenic high-erucic-acid rapeseed (Brassica napus) using a napin expression cassette. Erucic acid was present at the sn-2 position of triacylglycerols from transgenic plants but was absent from that position of seed oil extracted from control plants. Trierucin was present in the transgenic oil. Alteration of the sn-2 erucic acid composition did not affect the total erucic acid content. These experiments demonstrate the feasibility of using acyltransferases to alter the stereochemical composition of transgenic seed oils and also represent a necessary step toward increasing the erucic acid content of rapeseed oil.

=> s Linum(w)usitatissimum and transform?
L18 109 LINUM(W) USITATISSIMUM AND TRANSFORM?

=> d l18 1-5 ab

L18 ANSWER 1 OF 109 AGRICOLA

L18 ANSWER 2 OF 109 AGRICOLA
AB Four cyclic peptides, cyclolinopeptides F-I, were isolated from seeds of ***Linum*** ***usitatissimum*** . Their structures were elucidated by extensive 2D NMR spectroscopic methods and by chemical degradation. Further, their immunosuppressive activity is examined.

L18 ANSWER 3 OF 109 AGRICOLA

L18 ANSWER 4 OF 109 AGRICOLA
AB Jasmonic acid (JA) is involved in regulating the expression of certain plant defense genes and response to various stresses. JA biosynthesis is hypothesized to occur both in chloroplasts and the cytoplasm. In order to test whether or not a cytosol-localized allene oxide synthase (AOS) can promote JA biosynthesis, transgenic tobacco plants containing a flax AOS cDNA without a chloroplast transit sequence under the control of a tetracycline-inducible promoter were generated. Induction of the flax AOS gene in transgenic plants with chlor-tetracycline (Tc) led to the expression of the flax AOS mRNA and protein, which resulted in high level of metabolism of 13(S)-hydroperoxyoctadecatrienoic acid (13(S)-HPOT) and formation of 12-oxo-phytodienoic acid (12-O-PDA). Subcellular fractionation demonstrated that the flax AOS protein and activity were associated with the cytosol. Overexpression of the flax AOS in induced transgenic plants did not increase JA levels in healthy, undamaged leaf tissues. However, in wounded tissues overexpressing a flax AOS, levels of JA and the transcript of a pathogenesis-related gene (PR-1) dramatically increased when compared to those not expressing the flax AOS. Analysis of the release of wound-induced C6 volatiles showed that the level of (Z)-3-hexen-1-ol decreased about 30% due to overexpression of the cytoplasm-localized AOS, while (Z)-3-hexenal and (Z)-3-hexenyl acetate appeared not to be significantly altered. The data indicate that cytoplasmic AOS responds to wounding by increasing the levels of the wound-induced JA which in turn directly or indirectly enhances the expression of plant defense genes.

L18 ANSWER 5 OF 109 AGRICOLA
AB We have developed a rapid method to screen large numbers of mutant plants for a broad range of cell wall phenotypes using Fourier ***transform*** infrared (FTIR) microspectroscopy of leaves. We established and validated a model that can discriminate between the leaves of wild-type and a previously defined set of cell-wall mutants of Arabidopsis. Exploratory principal component analysis indicated that mutants deficient in different cell-wall sugars can be distinguished from each other. Discrimination of cell-wall mutants from wild-type was independent of variability in starch content or additional unrelated mutations that might be present in a heavily mutagenised population. We then developed an analysis of FTIR spectra of leaves obtained from over 1000 mutagenised flax plants, and selected 59 plants whose spectral variation from wild-type was significantly out of the range of a wild-type population, determined by Mahalanobis distance. Cell wall sugars from the leaves of selected putative mutants were assayed by gas chromatography-mass spectrometry and 42 showed significant differences in neutral sugar composition. The FTIR spectra indicated that six of the remaining 17 plants have altered ester or protein content. We conclude that linear discriminant analysis of FTIR spectra is a robust method to identify a broad range of structural and architectural alterations in cell walls, appearing as a consequence of developmental regulation, environmental adaptation or genetic modification.

=> d l18 6-10

L18 ANSWER 6 OF 109 AGRICOLA
AN 1999:27306 AGRICOLA

DN IND21978602
TI Expression of the Zn2+-containing hydroxynitrile lyase from flax (***Linum*** ***usitatissimum***) in Pichia pastoris--utilization of the recombinant enzyme for enzymatic analysis and site-directed mutagenesis.
AU Trummler, K.; Roos, J.; Schwaneberg, U.; Effenberger, F.; Forster, S.; Pfizenmaier, K.; Wajant, H.
CS University of Stuttgart, Stuttgart, Germany.
AV DNAL (QK1.P5)
SO Plant science, Dec 11, 1998. Vol. 139, No. 1. p. 19-27
Publisher: Shannon [Clare] : Elsevier Scientific Publishers Ireland Ltd., c1985-
CODEN: PLSCE4; ISSN: 0168-9452
NTE Includes references
CY Ireland
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L18 ANSWER 7 OF 109 AGRICOLA
AN 1998:82571 AGRICOLA
DN IND21806370
TI Near-infrared Fourier- ***transform*** Raman spectroscopy of flax (***Linum*** ***usitatissimum*** L.) stems.
AU Himmelsbach, D.S.; Akin, D.E.
CS ARS, USDA, Athens, GA.
AV DNAL (381 J8223)
SO Journal of agricultural and food chemistry, Mar 1998. Vol. 46, No. 3. p. 991-998
Publisher: Washington, D.C. : American Chemical Society.
CODEN: JAFCAU; ISSN: 0021-8561
NTE Includes references
CY District of Columbia; United States
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English

L18 ANSWER 8 OF 109 AGRICOLA
AN 97:80986 AGRICOLA
DN IND20603228
TI Fourier- ***transform*** infrared microspectroscopy of anatomically different cells of flax (***Linum*** ***usitatissimum***) stems during development.
AU Stewart, D.; McDougall, G.J.; Baty, A.
CS Scottish Crop Research Institute, Dundee, Scotland, UK.
SO Journal of agricultural and food chemistry, July 1995. Vol. 43, No. 7. p. 1853-1858
Publisher: Washington, D.C. : American Chemical Society.
CODEN: JAFCAU; ISSN: 0021-8561
NTE Includes references
CY District of Columbia; United States
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English

L18 ANSWER 9 OF 109 AGRICOLA
AN 97:58251 AGRICOLA

DN IND20586926
TI Haploidy and related biotechnological methods in linseed (***Linum*** ***usitatissimum*** L.).
AU Bergmann, R.; Friedt, W.
CS Justus-Liebig-University, Giessen, Germany.
AV DNAL (S494.5.B563C87 v.23 etc.)
SO [In vitro haploid production in higher plants], p. 1-16
Publisher: Dordrecht ; Boston : Kluwer Academic Publishers, c1996-
Series: Current plant science and biotechnology in agriculture ; 23, etc.
ISBN: 0792335805 (set : alk. paper).
NTE Volume 5: Oil, ornamental and miscellaneous plants.
Includes references
CY Netherlands
DT Article; Law
FS Non-U.S. Imprint other than FAO
LA English

L18 ANSWER 10 OF 109 AGRICOLA
AN 97:8644 AGRICOLA
DN IND20544371
TI Development and preliminary field testing of a glufosinate-ammonium tolerant transgenic flax.
AU McHughen, A.; Holm, F.A.
CS University of Saskatchewan, Saskatoon, Canada.
AV DNAL (450 C16)
SO Canadian journal of plant science, Jan 1995. Vol. 75, No. 1. p. 117-120
Publisher: Ottawa : Agricultural Institute of Canada, 1957-
CODEN: CPLSAY; ISSN: 0008-4220
NTE Includes references
CY Canada; Ontario
DT Article
FS Non-U.S. Imprint other than FAO
LA English
SL French

=> d l18 9 ab

L18 ANSWER 9 OF 109 AGRICOLA

=> d l19 11-15 ab
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=> d l18 11-15 ab

L18 ANSWER 11 OF 109 AGRICOLA

L18 ANSWER 12 OF 109 AGRICOLA
AB Both jasmonic acid (JA) and its methyl ester, methyl jasmonate (MeJA), are thought to be significant components of the signaling pathway regulating the expression of plant defense genes in response to various stresses. JA and MeJA are plant lipid derivatives synthesized from alpha-linolenic acid by a lipoxygenase-mediated oxygenation leading to 13-hydroperoxylinolenic

acid, which is subsequently ***transformed*** by the action of allene oxide synthase (AOS) and additional modification steps. AOS converts lipoxygenase-derived fatty acid hydroperoxide to allene epoxide, which is the precursor for JA formation. Overexpression of flax AOS cDNA under the regulation of the cauliflower mosaic virus 35S promoter in transgenic potato plants led to an increase in the endogenous level of JA. Transgenic plants had six- to 12-fold higher levels of JA than the nontransformed plants. Increased levels of JA have been observed when potato and tomato plants are mechanically wounded. Under these conditions, the proteinase inhibitor II (pin2) genes are expressed in the leaves. Despite the fact that the transgenic plants had levels of JA similar to those found in nontransgenic wounded plants, pin2 genes were not constitutively expressed in the leaves of these plants. Transgenic plants with increased levels of JA did not show changes in water state or in the expression of water stress-responsive genes. Furthermore, the transgenic plants overexpressing the flax AOS gene, and containing elevated levels of JA, responded to wounding or water stress by a further increase in JA and by activating the expression of either wound- or water stress-inducible genes. Protein gel blot analysis demonstrated that the flax-derived AOS protein accumulated in the chloroplasts of the transgenic plants.

L18 ANSWER 13 OF 109 AGRICOLA

L18 ANSWER 14 OF 109 AGRICOLA
AB Using an Agrobacterium tumefaciens binary vector (pAL4404, pBI131), we have demonstrated the transfer of the beta-glucuronidase gene into the flax (***Linum*** ***usitatissimum*** L.) cultivar Glenelg after selection for kanamycin resistance. The ***transformed*** lines were obtained by inoculation and subsequent regeneration of hypocotyl segments. The callus that formed on the cut surfaces of the hypocotyl segments was isolated three weeks after infection and was subsequently subcultured to yield shoots. This procedure generated a large number of transgenic shoots over a relatively short period of time. The ***transformation*** efficiencies obtained were the highest reported so far for this plant species.

L18 ANSWER 15 OF 109 AGRICOLA

=> s lunaria(w)annua and transform?
L19 3 LUNARIA(W) ANNUA AND TRANSFORM?

=> d l19 1-3 ab

L19 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS
AB Nucleic acid constructs are provided comprising transcriptional regulatory regions homologous to plant FAE1 promoters. In some embodiments, these constructs may be used in transgenic cells or plants to promote expression of foreign and endogenous genes in developing seeds, for example to affect seed lipid metab., protein or carbohydrate compn. and accumulation, or seed development.

L19 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
AB Wax synthase (WS, fatty acyl-CoA [coA]: fatty alc. acyltransferase) catalyzes the final step in the synthesis of linear esters (waxes) that accumulate in seeds of jojoba (Simmondsia chinensis). The authors have characterized and partially purified this enzyme from developing jojoba

embryos. A protein whose presence correlated with WS activity during chromatog. fractionation was identified and a cDNA encoding that protein was cloned. Seed-specific expression of the cDNA in transgenic Arabidopsis conferred high levels of WS activity on developing embryos from those plants. The WS sequence has significant homol. with several Arabidopsis open reading frames of unknown function. Wax prodn. in jojoba requires, in addn. to WS, a fatty acyl-CoA reductase (FAR) and an efficient fatty acid elongase system that forms the substrates preferred by the FAR. The authors have expressed the jojoba WS cDNA in Arabidopsis in combination with cDNAs encoding the jojoba FAR and a .beta.-ketoacyl-CoA synthase (a component of fatty acid elongase) from ***Lunaria*** ***annua*** . 13C-NMR anal. of pooled whole seeds from transgenic plants indicated that as many as 49% of the oil mols. in the seeds were waxes. Gas chromatog. anal. of transmethylated oil from individual seeds suggested that wax levels may represent up to 70% (by wt.) of the oil present in those seeds.

L19 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
AB cf. CA 63: 15136f. In unhydrolyzed seed exts. of L. annua, N5-(2-hydroxyethyl)-L-glutamine and 2-amino-4,5-dihydroxypentanoic acid were isolated and identified by comparison with synthetic samples. The synthetic sample of 2-amino-4,5-dihydroxypentanoic acid was a mixt. of two diastereoisomeric compds. The configuration at C-2 in the natural compd. has been established as L (or S) by ***transformation*** to L-aspartic acid, whereas the configuration at C-4 is unknown. In the isolation of the two compds., preparative ion-exchange chromatog., using elution with volatile bases corresponding to acids with the same pK values as those of the amino acids, was used. In this way the capacity of the sepn. has been increased. The chem. syntheses of N5-(2-hydroxyethyl)-L-glutamine, N5-(2-methylthioethyl)-L-glutamine, N5 - (2 - methylsulfinylethyl) - L - glutamine, N5 - (3-methylthiopropyl)-L-glutamine, N5-(3-methylsulfinylpropyl)-L-glutamine, N,N'-bis(.gamma.-L-glutamyl)cystamine, and N-methylpyrazole by conventional methods are described and Rf values on paper chromatog. recorded. Paper chromatographic detn. of the contents of free amino acids in other parts of L. annua has demonstrated that only very few of the many nonprotein amino acids present in seeds also occur in other parts of the plant. 33 references.

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=> s oenothera and transform?
L20          31 OENOTHERA AND TRANSFORM?

=> duplicate remove l20
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L20
L21           24 DUPLICATE REMOVE L20 (7 DUPLICATES REMOVED)

=> d l21 1-5 ab

L21  ANSWER 1 OF 24  CAPLUS  COPYRIGHT 2002 ACS
AB   Linoleic acid is converted into .gamma.-linolenic acid by the enzyme
     .DELTA.6-desaturase. The present invention is directed to isolated
     nucleic acids comprising the .DELTA.6-desaturase gene from evening
     primrose. More particularly, the isolated nucleic acid comprises the
     promoter, coding region and termination regions of the .DELTA.6-desaturase
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gene. The present invention provides recombinant vectors expressing .DELTA.6-desaturase gene controlled by heterologous regulatory promoter and terminator elements. The nucleic acids and recombinant constructions of the instant invention are useful in the prodn. of GLA in transgenic organisms.

L21 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB Cell culture has been used for many years, mainly using ***transformed*** cells, but in some instances normal cells. Generally, the more unsatd. fatty acids were most efficient at limiting cell growth. These fatty acids were usually more efficient at cell growth limitation and cell killing when used with ***transformed*** cells, compared to normal controls. Different species of mammals exhibit different capability to metabolize fatty acids, esp. polyunsatd. fatty acids. The enzymes for such metab. are largely cytosolic and mitochondrial, and are not found in erythrocytes. We have maintained erythrocytes from three species (rat, human and cat) in culture and exposed them to mixts. of fatty acids mimicking the compn. of seven dietary oils. The mixts. induced varying degrees of erythrocyte death, generally depending on the type and amt. of polyunsatd. fatty acids present in, and the concn. of, the mixts. Comparing the three species, the rat cells were generally the most susceptible to the effects of the fatty acids, with either human or cat least susceptible depending on the specific fatty acid mixt. Erythrocytes cannot metabolize fatty acids and hence are not able to remove the mixt. dosed, and any effects are most likely to relate to changes in the erythrocyte membrane phosphoglyceride bilayer structure.

L21 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding .beta.-Ketoacyl-Acyl Carrier Protein Synthase II have been isolated from maize and soybean tissues. These proteins, when expressed in a plant, can alter the sat. levels of the oil. Thus, maize somatic embryos ***transformed*** with plasmid pDAB395 contg. the soybean kasII gene demonstrated oil contents with reduced levels of palmitic and stearic acids.

L21 ANSWER 4 OF 24 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AB Evening primrose (***Oenothera*** spp.) is grown commercially for its seed oil that contains gamma linolenic acid (GLA), a valuable food supplement and pharmaceutical. There is considerable interest in the potential of genetic engineering to improve yields of GLA in evening primrose, and attention has focused on the current state of tissue-culture knowledge in this species which is a prerequisite for genetic ***transformation*** . Published protocols for the regeneration of plants from leaf or cotyledon material of ***Oenothera*** spp. are available, but these prove unsatisfactory when applied to commercial cultivars used in this study. An efficient method for regenerating three commercial cultivars of evening primrose Rigel, Merlin and Vulcan was developed using thidiazuron (TDZ) as a growth regulator. Explants from one month old seedlings were cultivated in vitro; a large number of buds were induced directly from strips of leaves, cotyledons and stems when cultured on Murashige and Skoog (MS) basal medium containing TDZ and indole-butyric acid (IBA). Shoots that were excised and placed onto MS basal medium, supplemented with IBA, rooted with 85-90% efficiency. Plantlets were transferred to soil after 6-8 wk. TDZ stimulated the regeneration process,

and its effects were enhanced when combined with IBA or indole-3-acetic acid (IAA). The methods developed may be a useful advance toward improvement of this oil seed crop through genetic modification.

L21 ANSWER 5 OF 24 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB The entire nucleotide sequence of the chloroplast genome has been determined from 12 land plants. The gene content and arrangement are relatively uniform from species to species, and the genome contains an average of 111 identified gene species (except Epifagus). Chloroplast genes can be classified into three main categories: Genes for the photosynthetic apparatus, those for the transcription/translation system, and those related to biosyntheses. The genes encoding components of the photosynthesis apparatus have been identified by protein chemical analyses from higher plants, Chlamydomonas and cyanobacteria, and then by chloroplast ***transformation*** techniques using tobacco and Chlamydomonas. The genes for subunits of RNA polymerases and of ribosomes were initially deduced similarity to those in E. coli, and later confirmed by protein analyses. Coding information is often modified at the level of transcripts by RNA editing (mostly C-U changes), resulting in amino acid substitutions and creation of novel reading frames. Perspectives of chloroplast genomics are discussed.

=> d l21 6-10 ab

L21 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB The present invention provides protein and DNA sequences of Arabidopsis thaliana diacylglycerol acyltransferase (DGAT), which is a key enzyme for the biosynthesis of fatty acids that are channeled into the cytosolic acyl-CoA pool to sustain triacylglycerol accumulation. The invention includes isolated and purified DGAT DNA, and methods of regulating seed oil content, the ratio of diacylglycerol/triacylglycerol proportions in the seed oil, fatty acid synthesis, seed oil acyl compn., seed size/wt. and carbon flux into other seed components, using the gene, and to tissues and plants ***transformed*** with the gene. The invention also relates to transgenic plants, plant tissues and plant seeds having a genome contg. an introduced DNA sequence of the invention, and a method of producing such plants and plant seeds. The invention further relates to the uses of DGAT in modifying the natural formation of triacylglycerols in plants in order to increase the yield of com. plant oils, or to modify their compn. to achieve specific com. improvements of plants and plant products.

L21 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB The gene encoding a palmitoyl-CoA .DELTA.9-desaturase is isolated and cloned from Aspergillus nidulans. When expressed in a plant, this enzyme can alter the sat. levels of the oil produced by the plant. The open reading frame of the Aspergillus enzyme is cloned in plasmid pDAB439 between the ubiquitin promoter/intron and Nos terminator. Optimal expression of the heterologous gene in maize is achieved by (1) reengineering the gene sequence based on preferred codon usage in maize and (2) replacing the ubiquitin promoter/intron in pDAB463 with the promoter of the maize globulin gene. In order to express the gene in a seed-specific manner, the Aspergillus desaturase is placed behind the phaseolin promoter from Phaseolus vulgaris. Fatty acid 16:1.DELTA.9 is identified in an ext. from a ***transformed*** maize seed embryo.

L21 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB A cDNA encoding a .DELTA.6-desaturase of Caenorhabditis elegans has been cloned and sequenced, and the amino acid sequence of the enzyme has been detd. The C. elegans .DELTA.6 desaturase has a surprisingly low level of sequence identity with the known borage .DELTA.6 desaturase. The C. elegans .DELTA.6 desaturase has been expressed in yeast. It and other desaturases can be cloned in host organisms (e.g. plants) and can be used to provide useful metabolites. The gene was first identified by searching of EST databases for homologs of the borage .DELTA.6 desaturase. A full-length cDNA was cloned and the identity of the enzyme was confirmed by expression in Saccharomyces cerevisiae using the synthesis of .gamma.-linolenic acid as a marker. Expression of the cDNA in Arabidopsis thaliana led to the appearance of .gamma.-linolenic acid and octadecatetraenoic acid.

L21 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding acyl-acyl carrier protein thioesterases have been cloned from maize. These genes, when expressed in a plant, can be used to create transgenic plants having altered oil profiles. A cDNA for the palmitoyl-ACP thioesterase was cloned from a corn kernel cDNA library by PCR and expressed in Escherichia coli using the PET-2b system. The enzyme manufd. in Escherichia coli was active against a broad range of fatty acid thioesters with acyl carrier protein but was most active against palmitoyl-ACP and more active against C18 fatty acyl ACP than C14 fatty acyl ACP. Expression vectors using a seed-specific corn globulin promoter were used to drive expression of the gene in transgenic corn. ***Transformed*** plants showed alterations in the fatty acid profile of the seed oil including an overall drop in C16 fatty acids.

L21 ANSWER 10 OF 24 AGRICOLA DUPLICATE 2
AB A favourable combination of genetic features in the genus ***Oenothera*** offers access to fundamental biological aspects that are not readily approached with other materials. We have developed protocols for cell and tissue culture as well as for ***transformation*** , in order to establish the basis for a comprehensive cell and molecular biology of Euoenothera species, their genome/plastome hybrids and plastome mutants. Regeneration of plants from excised seedling parts (roots, hypocotyl, cotyledons, shoot tips) and leaf explants was optimal on NT medium containing 1 mg(.)l-1 6-benzylaminopurine and 3 mg(.)l-1 alpha-naphtalene acetic acid. This medium also proved to be efficient in the propagation of various wild-type genotypes, interspecific hybrids and plastome mutants. Using Ti-based approaches we also succeeded in generating transgenic ***Oenothera*** plants with relatively high efficiency.

=> s ricinus(w)communis and transform?
L22 257 RICINUS(W) COMMUNIS AND TRANSFORM?

=> duplicate remove l22
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L22
L23 158 DUPLICATE REMOVE L22 (99 DUPLICATES REMOVED)

=> d l23 1-5 ab

L23 ANSWER 1 OF 158 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB Protoplast regeneration from extruded cytoplasm of the multicellular marine green alga Microdictyon umbilicatum (Velley) Zanardini (Cladophorales, Anadyomenaceae) was investigated. The early process of protoplast formation is comprised of two steps: agglutination of cell organelles into protoplasmic masses followed by generation of a temporary enclosing envelope around them. Agglutination of cell organelles was mediated by a lectin-carbohydrate complementary system. Three sugars, D-galactosamine, D-glucosamine, and alpha-D-mannose, inhibited the agglutination process, and three complementary lectins for the above sugars, peanut agglutinin, ***Ricinus*** ***communis*** agglutinin, and concanavalin A, bound to the surfaces of chloroplasts. Agglutination assay using human erythrocytes showed the presence of lectins specific for the above sugars in the algal vacuolar sap. A fluorescent probe 1-(4-trimethylammoniumphenyl)-6-phenyl-a, 3,5-hexatriene revealed that the envelope initially surrounding protoplasts was not a lipid-based cell membrane. However, this developed several hours later. Simultaneous fluorescein diacetate and propidium iodide staining showed that the primary envelope had some characteristics of cell membranes, such as semipermeability and selective transport of materials. Also, fluorescein diacetate staining showed esterase activity in the protoplast and relocation of cell organelles and compartmentalization of cytoplasm during the process of regeneration. Both pH 7-9 and salinity 400-500 mM were found to be essentially important for the development of the protoplast envelope. When the basic regeneration process was accomplished, two alternative pathways of development were seen; about 70% of one-celled protoplasts ***transformed*** into reproductive cells within 2 weeks after wounding, whereas others began cell division and grew into typical Microdictyon thalli. Quadriflagellate swarmers were liberated from the reproductive cells, and they germinated into mature individuals. It is therefore suggested that this species may use the wound response as a method of propagation and dispersal.

L23 ANSWER 2 OF 158 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
AB The coding sequence of DELTA9-stearoyl-(acyl carrier protein) desaturase from ***Ricinus*** ***communis*** was introduced into sunflower, under the control of seed-specific promoter and terminator sequences of the late embryogenesis abundant gene from sunflower, Hads10. Two independent primary ***transformants*** contained three and six copies of the T-DNA, as demonstrated by hybridization using nptII as a probe. The transgene proved genetically stable and was transmitted as a Mendelian trait. Transcript analysis of the heterologous DELTA9-stearoyl-(acyl carrier protein) desaturase under control of the Hads10 promoter verified tissue-specific expression in the developing embryos and not in the leaves. Fatty acid composition of the seed oil was followed over five generations under greenhouse and open field conditions. Some of the transgenic lines produced oil with a significantly reduced stearic acid content compared with non- ***transformed*** plants under greenhouse and field conditions. However, additional studies need to be performed to assess whether or not physiologically stable lines can be developed from these transgenic lines.

L23 ANSWER 3 OF 158 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2

AB Enriched populations of human microglial cells were isolated from mixed cell cultures prepared from embryonic human telencephalon tissues. Human microglial cells exhibited cell type-specific antigens for macrophage-microglia lineage cells including CD11b (Mac-1), CD68, B7-2 (CD86), HLA-ABC, HLA-DR and ***ricinus*** ***communis*** aggulutinin lectin-1 (RCA-1), and actively phagocytosed latex beads. Gene expression and protein production of cytokines, chemokines and cytokine/chemokine receptors were investigated in the purified populations of human microglia. Normal unstimulated human microglia expressed constitutively mRNA transcripts for interleukin-1beta (IL-1beta) -6, -8, -10, -12, -15, tumor necrosis factor-alpha (TNF-alpha), macrophage inflammatory protein-1alpha (MIP-1alpha), MIP-1beta, and monocyte chemoattractant protein-1 (MCP-1), while treatment with lipopolysaccharide (LPS) or amyloid beta peptides (Abeta) led to increased expression of mRNA levels of IL-8, IL-10, IL-12, TNF-alpha, MIP-1alpha, MIP-1beta, and MCP-1. Human microglia, in addition, expressed mRNA transcripts for IL-1RI, IL-1RII, IL-5R, IL-6R, IL-8R, IL-9R, IL-10R, IL-12R, IL-13R, and IL-15R. Enzyme-linked immunosorbent assays (ELISA) showed increased protein levels in culture media of IL-1beta, IL-8, TNF-alpha, and MIP-1alpha in human microglia following treatment with LPS or Abeta. Increased TNF-alpha release from human microglia following LPS treatment was completely inhibited with IL-10 pre-treatment, but not with IL-6, IL-9, IL-12, IL-13, or ***transforming*** growth factor-beta (TGF-beta). Present results should help in understanding the basic microglial biology, but also the pathophysiology of activated microglia in neurological diseases such as Alzheimer disease, Parkinson disease, Huntington disease, amyotrophic lateral sclerosis, stroke, and neurotrauma.

L23 ANSWER 4 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB The invention relates to castor plants ***transformed*** with a transgene capable of being expressed in the ***transformed*** plant. The invention also relates to methods for ***transforming*** castor and for reproducing plants therefrom. ***Transformation*** may be used to lower the allergenicity and toxicity of castor beans. The plant may be ***transformed*** using Agrobacterium tumefaciens. T-DNA-mediated introduction of a .beta.-glucuronidase reporter gene into cut shoot tips, embryos, and buds is demonstrated. ***Transformation*** by microprojectile bombardment is also demonstrated.

L23 ANSWER 5 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB The invention provides protein and cDNA sequences of a calreticulin gene and its promoter region from castor seed (***Ricinus*** ***communis*** L.). The gene for calnexin is also cloned from castor seed (***Ricinus*** ***communis*** L.). The invention also relates to constructing gene expression vector to produce recombinant calreticulin and calnexin protein and use their promoter to drive tissue-specific gene expression in transgenic plants.

=> d l23 6-10 ab

L23 ANSWER 6 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB Microglia are a major glial component of the central nervous system (CNS), play a crit. role as resident immunocompetent and phagocytic cells in the CNS, and serve as scavenger cells in the event of infection, inflammation, trauma, ischemia, and neurodegeneration in the CNS. Studies of human microglia have been hampered by the difficulty of obtaining sufficient

nos. of human microglia. One way to circumvent this difficulty is to establish permanent cell lines of human microglia. In the present study we report the generation of immortalized human microglial cell line, HMO6, from human embryonic telencephalon tissue using a retroviral vector encoding myc oncogene. The HMO6 cells exhibited cell type-specific antigens for microglia-macrophage lineage cells including CD11b (Mac-1), CD68, CD86 (B7-2), HLA-ABC, HLA-DR, and ***Ricinus*** ***communis*** agglutinin lectin-1 (RCA), and actively phagocytosed latex beads. In addn., HMO6 cells showed ATP-induced responses similar to human primary microglia in Ca2+ influx spectroscopy. Both human primary microglia and HMO6 cells showed the similar cytokine gene expression in IL-1.beta., IL-6, IL-8, IL-10, IL-12, IL-15, and TNF-.alpha.. Using HMO6 cells, we investigated whether activation was induced by Amyloid-.beta. fragments or lipopolysaccharide (LPS). Treatment of HMO6 cells with Amyloid-.beta. 25-35 fragment (A.beta.25-35) or Amyloid-.beta. 1-42 fragment (A.beta.1-42) led to increased expression of mRNA levels of cytokine/chemokine IL-8, IL-10, IL-12, MIP-1.beta. MIP-1, and MCP-1, and treatment with LPS produced same results. Expression of TNF-.alpha. and MIP1-.alpha. was not detected in unstimulated HMO6 cells, but their expression was later induced by long-term exposure to A.beta.25-35 or A.beta.1-42. ELISA assays of spent culture media showed increased protein levels of TNF-.alpha. and IL-8 in HMO6 cells following treatment with A.beta.25-35 or LPS. Our results demonstrate that treatment of human primary microglia and HMO6 immortalized human microglia cell line with A.beta.25-35, A.beta.1-42 and LPS upregulate gene expression and protein prodn. of proinflammatory cytokines and chemokines in these cells. The human microglial cell line HMO6 exhibits similar properties to those documented in human microglia and should have considerable utility as an in vitro model for the studies of human microglia in health and disease. (c) 2001 Academic Press.

L23 ANSWER 7 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB Ricinine was isolated from ***Ricinus*** ***communis*** L. Its derivs. were obtained.

L23 ANSWER 8 OF 158 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 3
AB Cisplatin, methotrexate, vincristin, and cytotoxic lectins (Viscum album agglutinin 1 and ***Ricinus*** ***communis*** agglutinin) were shown to induce TGF.beta.1 production in L1210 murine leukemia cells. Different patterns of TGF.beta.1 production were observed under the effect of the above mentioned cytotoxic agents in cisplatin-sensitive and resistant L1210 cells. As TGF.beta.1 inhibits proliferation and induces apoptosis in cisplatin-sensitive L1210 cells, it was suggested that this cytokine can mediate effects of cytotoxic agents.

L23 ANSWER 9 OF 158 AGRICOLA

L23 ANSWER 10 OF 158 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AB BACKGROUND. Alteration of the expression of glycoconjugates is frequently observed in tumors. However, studies on the changes of cellular glycosylation in the early premalignant stage of prostate carcinogenesis are scarce. METHODS. The present study characterized and compared the glycoconjugates expressed in the dysplastic lateral prostate induced in Noble (Nb) rat by steroid hormones and a transplantable androgen-independent Nb rat prostatic carcinoma line (AIT) by lectin histochemistry and protein blotting. RESULTS. The results of lectin histochemistry show that the dysplastic prostatic epithelium elaborates

altered patterns of glycosylation, which are distinct from the normal secretory epithelium. Some individual cells in the dysplastic epithelium were intensely labeled by the N-acetylgalactosamine (GalNAc)-specific (agglutins from Glycine max [SBA], Helix aspera [HAA], Helix pomatia [HPA], Vicia villosa [VVA], Erythrina cristigalli [ECA]) and complex-type oligosaccharide-specific (Phaseolus vulgaris agglutin [PHA-E]) lectins, indicating that these cells contained abundant GalNAc(.alpha.1,3)GalNAc/Gal and Gal(.beta.1,4)GlcNAc(.alpha.1,2)Man(.alpha.1,6) residues. These lectins also bound to some tumor cells in the AIT, suggesting that these sugar residues are common in some dysplastic and neoplastic prostatic cells. The study has also identified several lectins (agglutins from Griffonia simplicifolia [GS-I-B(4)], Arachis hypogaea [PNA], ***Ricinus*** ***communis*** [RCA-I], Maackia amurensis [MAA], Sambucus nigra [SNA]), which bound only to some AIT tumor cells but not to dysplastic epithelium, indicating that .alpha./.beta.Gal and sialic acid-containing glycoconjugates are expressed by neoplastic prostatic cells. The results of lectin blottings with Triticum vulgare agglutin [S-WGA] Ulex europaeus agglutin [UEA-I] and PHA-E have identified five major glycoprotein bands (of apparent molecular weights of 116, 79, 64, 61, and 57 kDa) in the microsomal fraction of testosterone plus 17.beta.estradiol (T + E(2))-treated lateral prostate. These lectin-reactive bands were not detected in the AIT extracts. In the AIT microsomal extract, two glycoprotein bands of molecular weights of 58 and 46 kDa were revealed by SBA and PNA. CONCLUSIONS. The present study shows that there is an increased expression of GalNAc(.alpha.1,3)GalNAc/Gal residues and triantennary complex-type oligosaccharides in the dysplastic epithelial cells as compared to normal secretory epithelial cells in rat lateral prostate. This altered expression of glycoconjugates revealed in the dysplastic epithelium]indicates an aberrant glycosylation in the early premalignant stage of prostate carcinogenesis. The results also show that the AIT tumor cells are heterogeneous in their glycoconjugates and different from the dysplastic epithelial cells. .COPYRGT. 2001 Wiley-Liss, Inc.

=> d l23 11-16 ab

L23 ANSWER 11 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB The invention provides protein and cDNA sequences of a novel gene isolated from ***Ricinus*** ***communis*** which encodes for a protein TagH12 capable of interacting with the oleate 12-hydroxylase that catalyzes the introduction of a hydroxyl group in the mol. of oleic acid (18:1.DELTA.9) ***transforming*** it into ricinoleic acid (12-OH, 18:1.DELTA.9). The invention also relates to means and methods for producing transgenic plants with a modified compn. of fatty acids.

L23 ANSWER 12 OF 158 AGRICOLA

L23 ANSWER 13 OF 158 CAPLUS COPYRIGHT 2002 ACS
AB Many of the strategies developed in the last few years to treat cancer by gene therapy are based on putative killer-suicide genes whose products convert a prodrug into a toxic compd. When the therapy is applied to humans, a vector carrying the killer gene is first inoculated into the tumor of the patient, who 1 wk later receives the corresponding prodrug that will selectively kill the cells able to process it to its toxic deriv. A strategy that obviates the need for a prodrug to destroy the cancer cells would be preferable because the patient would only need one

treatment instead of two consecutive ones. In the following study, we describe the construction of retroviral vectors in which a reporter or a toxin gene (either the Pseudomonas exotoxin or the ***Ricinus*** ***communis*** toxin, ricin) is placed under the control of the thyroid hormone (T3) regulatable promoter of the rat myelin basic protein (MBPp). We demonstrate that the expression of these genes under the control of MBPp is regulated by T3 in vitro and in vivo. In vitro, the MBPp is switched off when T3 is removed from the serum of the culture medium, allowing the prodn. of retroviruses carrying the toxic gene. In vivo, the toxin gene bearing retroviruses is capable of eradicating exptl. induced brain tumors in Wistar rats. The gene therapy strategy described here does not require the use of a prodrug to destroy the neoplastic cells.

L23 ANSWER 14 OF 158 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 4
AB Lectins isolated from ten different plant sources including some new lectins were studied for their cytotoxicity towards murine leukemia cells of L1210 line. In separate experiments human lung carcinoma cells of A-549 were also used. Four lectins possessed the highest toxicity: Viscum album (mistletoe) and ***Ricinus*** ***communis*** (castor beans) agglutinins were characterised by IC(50) equal 1-10 ng/ml and Paris quadrifolia and wheat germ agglutinins - by IC(50) equal 1-10 .mu.g/ml. All cytotoxic lectins induced cell death by the apoptotic pathway, as detected by DNA-fragmentation and cytomorphological tests. Mistletoe and castor beans lectins as well as antitumor drug cisplatin were shown to enhance the production of latent form of ***transforming*** growth factor .beta.1 (TGF-.beta.1, estimated by ELISA) in L1210 cells. This cytokine induced apoptosis in the above mentioned cells. Mistletoe lectin, inhibitors of translation and transcription and heat shock also increased TGF-.beta.1 production in A-549 human carcinoma cell line. TGF-.beta.1 and heat shock induced apoptosis in these tumor cells. Thus, different stressing agents (antitumor drugs, cytotoxic lectins and heat shock) can enhance latent TGF-.beta.1 production by tumor cells, although activation of this cytokine is necessary for its direct involvement into the apoptotic action.

L23 ANSWER 15 OF 158 AGRICOLA DUPLICATE 5
AB Ethylene emission from wild-type Agrobacterium tumefaciens (C58)-induced stem tumours of ***Ricinus*** ***communis*** was continuously measured with two different methods, process gas chromatography and photo-acoustic spectrometry. Ethylene production was as high as 700 pmol g FW-1 h-1, namely 140 times greater than emitted by nontumourized control stems. It was highest in 5-week-old tumours, independent of light, depressed by anoxia and, during water deficit it was stimulated by rewatering. A remarkable concomitant CO-production was discovered. Accumulation of 1-aminocyclopropane-1-carboxylic acid (ACC), the substrate of ACC-oxidase, preceded ethylene emission with a maximum 2 weeks after tumour induction. Simultaneously, the xylem in the tumour-adjacent host stem underwent drastic changes: it increased two to three times in thickness, vessel diameters decreased, the rays remained unlignified and became multiseriate. With increasing emission of ethylene aerenchyma developed in the non- ***transformed*** , tumour-surrounding tissue that formerly was stem cortex. Cotyledons reacted with epinastic symptoms indicating induction of senescence. The present results reveal an important role of ethylene, in addition to cytokinin and auxin, for the differentiation and physiology of A. tumefaciens-induced tumours.

L23 ANSWER 16 OF 158 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AB The mobilization of storage protein and phytin was studied in aleuronic granules isolated from the endosperm of germinating ***Ricinus*** ***communis*** seeds. Differential staining of the protein and phytin components of aleuronic granule was used to show the phytin mobilization began prior to protein mobilization. Biochemical analysis demonstrated that the loss of phytin in endosperm was 14% 64 hours after the beginning of swelling; the loss gradually increased and reached 87% to the 6th day of the experiment; at the same, time phytase activity also increased. Phytin concentration simultaneously grew in the axial organs and cotyledons. Mobilization of storage proteins started after seed hatching. The activity of two proteolytic enzymes sharply increased to the 3rd and 5th days in accordance with the degradation of storage proteins and was manifested as ***transformation*** of aleuronic granules into aleuronic vacuoles on the 3rd day. It was concluded that the beginning of phytin and protein mobilization in endosperm preceded the beginning of the mobilization of storage lipids and determined the composition of compounds moving from endosperm into sprout.

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=> s l23 and regenerated(w)ricinus
L24           0 L23 AND REGENERATED(W) RICINUS

=> s l23 and transformed(w)ricinus
L25           0 L23 AND TRANSFORMED(W) RICINUS

=> s l23 and transform?(w)ricinus
L26           0 L23 AND TRANSFORM?(W) RICINUS

=> s l23 ricinus(w)transformation
MISSING OPERATOR L23 RICINUS
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l23 and ricinus(w)transformation
L27           0 L23 AND RICINUS(W) TRANSFORMATION

=> s simmondsia(w)chinensis and transform?
L28          18 SIMMONDSIA(W) CHINENSIS AND TRANSFORM?

=> duplicate remove l28
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L28
L29           18 DUPLICATE REMOVE L28 (0 DUPLICATES REMOVED)

=> s l29 1-5 ab
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The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> d l29 1-5 ab

L29  ANSWER 1 OF 18  CAPLUS  COPYRIGHT 2002 ACS
AB   The present invention relates to novel and improved methods of producing
     com. levels of chymosin in transgenic plants, by recombinant expression of
     chymosin in plant seeds, is described.  An improved method for the
     lab.-scale purifn. of chymosin from transgenic seed produced is described.
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Construction of a plant ***transformation*** vector comprising of a chimeric nucleic acid sequence contg. prepro-chymosin is also described. Agrobacterium strain EHA101 (pSBS2151) was used to ***transform*** Brassica napus. The biol. activity of the plant (Brassica) derived chymosin was detd. through the use of milk-clotting assays. Transgenic Brassica seeds had the ability to clot milk whereas, seeds that were not ***transformed*** with the prochymosin gene were unable to clot milk.

L29 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding .beta.-Ketoacyl-Acyl Carrier Protein Synthase II have been isolated from maize and soybean tissues. These proteins, when expressed in a plant, can alter the sat. levels of the oil. Thus, maize somatic embryos ***transformed*** with plasmid pDAB395 contg. the soybean kasII gene demonstrated oil contents with reduced levels of palmitic and stearic acids.

L29 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB By this invention, nucleic acid sequences encoding for fatty acyl-CoA:fatty alc. acyltransferase (wax synthase, EC 2.3.1.75) are provided from jojoba (***Simmondsia*** ***chinensis***) and Arabidopsis thaliana, wherein said wax synthase is active in the formation of a wax ester from fatty alc. and fatty acyl-CoA substrates. Of special interest are nucleic acid sequences obtainable from a jojoba embryo wax synthase having an apparent mol. mass of .apprx.33 kDa. Also provided are 7 repeats of an A. thaliana genomic sequence with similarity to jojoba wax synthase. Also considered are amino acid and nucleic acid sequences obtainable from wax synthase proteins and the use of such sequences to provide transgenic host cells capable of producing wax esters. Methods of producing wax esters in a plant cell by expressing a heterologous cDNA sequence encoding fatty acyl acyltransferase are described. The invention also provides plant cells contg. wax ester, and novel oil compns. and was compns. comprising 40:2 wax ester as a predominant component.

L29 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB By this invention, nucleic acid sequences encoding enzymes with diacylglycerol acyltransferase (DAGAT) activity are provided, wherein said DAGAT is active in the formation of triacylglycerol from fatty acyl-CoA and sn-1,2-diacylglycerol substrates. Of special interest are nucleic acid sequences from jojoba which encode a protein capable of producing wax esters from fatty alc. and fatty acyl substrates, as well as producing triacylglycerol from sn-1,2-diacylglycerol and fatty acid substrates. Also of interest are sequences related to the jojoba embryo wax synthase from Arabidopsis. Also considered are amino acid and nucleic acid sequences encoding DAGAT proteins and the use of such sequences to provide transgenic host cells capable of producing modified triacylglycerol compns.

L29 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Wax synthase (WS, fatty acyl-CoA [coA]: fatty alc. acyltransferase) catalyzes the final step in the synthesis of linear esters (waxes) that accumulate in seeds of jojoba (***Simmondsia*** ***chinensis***). The authors have characterized and partially purified this enzyme from developing jojoba embryos. A protein whose presence correlated with WS activity during chromatog. fractionation was identified and a cDNA encoding that protein was cloned. Seed-specific expression of the cDNA in transgenic Arabidopsis conferred high levels of WS activity on developing embryos from those plants. The WS sequence has significant homol. with

several Arabidopsis open reading frames of unknown function. Wax prodn. in jojoba requires, in addn. to WS, a fatty acyl-CoA reductase (FAR) and an efficient fatty acid elongase system that forms the substrates preferred by the FAR. The authors have expressed the jojoba WS cDNA in Arabidopsis in combination with cDNAs encoding the jojoba FAR and a .beta.-ketoacyl-CoA synthase (a component of fatty acid elongase) from Lunaria annua. 13C-NMR anal. of pooled whole seeds from transgenic plants indicated that as many as 49% of the oil mols. in the seeds were waxes. Gas chromatog. anal. of transmethylated oil from individual seeds suggested that wax levels may represent up to 70% (by wt.) of the oil present in those seeds.

=> s l29 and jojoba(w)transformation
L30 0 L29 AND JOJOBA(W) TRANSFORMATION

=> d l29 6-10 ab

L29 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Simmondsin and its analogs, demethyl-, didemethylsimmondsins (DMS/DDMS) and the 2'- and 3'-simmondsin ferulates are components isolable from jojoba (***Simmondsia*** ***chinensis***) seed meal. While the parent compd., simmondsin, is reported to exhibit anorexic properties, its demethylated analogs not only lack this behavior, they also have no identifiable market value. To create optimum utilization of these byproducts, the goal of this research project was to chem. functionalize DMS and DDMS thereby ***transforming*** them to materials having economic potential. Thus using the intrinsic chem. properties of the olefin groups in DMS, simmondsin oxide analogs were generated. It is expected these simmondsin oxiranes would provide platforms for expanding utilization of the otherwise waste materials of jojoba seed meal processing.

L29 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB The gene encoding a palmitoyl-CoA .DELTA.9-desaturase is isolated and cloned from Aspergillus nidulans. When expressed in a plant, this enzyme can alter the sat. levels of the oil produced by the plant. The open reading frame of the Aspergillus enzyme is cloned in plasmid pDAB439 between the ubiquitin promoter/intron and Nos terminator. Optimal expression of the heterologous gene in maize is achieved by (1) reengineering the gene sequence based on preferred codon usage in maize and (2) replacing the ubiquitin promoter/intron in pDAB463 with the promoter of the maize globulin gene. In order to express the gene in a seed-specific manner, the Aspergillus desaturase is placed behind the phaseolin promoter from Phaseolus vulgaris. Fatty acid 16:1.DELTA.9 is identified in an ext. from a ***transformed*** maize seed embryo.

L29 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB By this invention, nucleic acid sequences encoding for fatty acyl-CoA:fatty alc. acyltransferase (wax synthase, EC 2.3.1.75) are provided, wherein said wax synthase is active in the formation of a wax ester from fatty alc. and fatty acyl-CoA substrates. Of special interest are nucleic acid sequences obtainable from a jojoba embryo wax synthase having an apparent mol. mass of .apprx.33 kDa. Jojoba wax synthase was purified 150-fold in 6.9 yield and shown to utilize a broad range of fatty acyl-CoA and fatty alc. substrates. Also considered are amino acid and nucleic acid sequences obtainable from wax synthase proteins and the use

of such sequences to provide transgenic host cells capable of producing wax esters.

L29 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Diacylglycerol acyltransferase proteins are provided capable of catalyzing the prodn. of triglycerides from 1,2-diacylglycerol and an acyl-CoA. Partially purified diacylglycerol acyltransferase (DAGAT) is provided from jojoba and Mortierella ramaniana, wherein said protein is active in the formation of triacylglycerol from fatty acyl-CoA and diacylglycerol substrates. Of special interest is a Mortierella ramanniana DAGAT having a mol. mass of approx. 40kD. Also considered are amino acid and nucleic acid sequences obtainable from DAGAT proteins and the use of such sequences to provide transgenic host cells with modified triacylglycerol levels. Wax ester synthase purified from jojoba is shown to have DAGAT activity.

L29 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Genes encoding acyl-acyl carrier protein thioesterases have been cloned from maize. These genes, when expressed in a plant, can be used to create transgenic plants having altered oil profiles. A cDNA for the palmitoyl-ACP thioesterase was cloned from a corn kernel cDNA library by PCR and expressed in Escherichia coli using the PET-2b system. The enzyme manufd. in Escherichia coli was active against a broad range of fatty acid thioesters with acyl carrier protein but was most active against palmitoyl-ACP and more active against C18 fatty acyl ACP than C14 fatty acyl ACP. Expression vectors using a seed-specific corn globulin promoter were used to drive expression of the gene in transgenic corn. ***Transformed*** plants showed alterations in the fatty acid profile of the seed oil including an overall drop in C16 fatty acids.

=> d l29 11-16 ab

L29 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB The invention provides a method of producing a wax ester in a plant cell whereby a plant cell having a fatty acyl reductase expressed from a sequence heterologous to said plant is grown in the absence of a wax synthase expressed from a sequence which is heterologous to the plant. The fatty acyl-CoA reductase from jojoba (***Simmondsia*** ***chinensis***) is purified, characterized, and its cDNA sequence detd. and expressed in Escherichia coli. A method of producing wax ester in a plant cell by expressing a heterologous cDNA encoding jojoba fatty acyl reductase is described. The invention also provides plant cells contg. wax ester, and novel oil compns. and wax compns. comprising 40:2 wax ester as a predominant component.

L29 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Methods of using ribozymes to control gene expression in plants are described. Ribozymes aimed at the granule-bound starch synthase and .DELTA.9 desaturase are described for use in the modulation of carbohydrate and fatty acid metab. Potential ribozyme cleavage sites in the mRNAs for the two enzymes were identified by examg. their sequences and a no. of these sites were tested using an in vitro RNAse H assay. Hammerhead and hairpin enzymes were prepd. against the best candidate sites. Corn callus was ***transformed*** with expression constructs

and callus and transgenic plants regenerated. Plants expressing the .DELTA.9 desaturase ribozyme gene showed decreased levels of the desaturase mRNA, although the gene was still being transcribed, and increased levels of stearic acid in leaf.

L29 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB A plant .beta.-ketoacyl-CoA synthase-condensing enzyme is provided free from intact cells of jojoba plants and is capable of catalyzing the prodn. of very long chain fatty acid mols. Also contemplated are constructs comprising the nucleic acid sequence and a heterologous DNA sequence not naturally assocd. with the condensing enzyme-encoding sequences, and which provide for at least transcription of a plant condensing enzyme-encoding sequence in a host cell such as Brassica napus. In this fashion very long chain fatty acid mols. may be produced in a plant cell. Included are methods of modifying the compn. of very long chain fatty acid mols in a plant cell. These can be incorporated into wax esters.

L29 ANSWER 14 OF 18 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

L29 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Transgenic alfalfa plants were developed to test whether jojoba seed elongase condensing enzyme can function in a heterologous epidermal elongation system. Expression of jojoba seed elongase gene did not result in elongated monounsatd. product in the epicuticular wax. Elongase assay showed low activity of [14C]malate CoA incorporation in transgenic alfalfa microsomal prepns.

L29 ANSWER 16 OF 18 AGRICOLA
AB beta-Ketoacyl-coenzyme A (CoA) synthase (KCS) catalyzes the condensation of malonyl-CoA with long-chain acyl-CoA. This reaction is the initial step of the microsomal fatty acyl-CoA elongation pathway responsible for formation of very long chain fatty acids (VLCFAs, or fatty acids with chain lengths >18 carbons). Manipulation of this pathway is significant for agriculture, because it is the basis of conversion of high erucic acid rapeseed into canola. High erucic acid rapeseed oil, used as an industrial feedstock, is rich in VLCFAs, whereas the edible oil extracted from canola is essentially devoid of VLCFAs. Here, we report the cloning of a cDNA from developing jojoba embryos involved in microsomal fatty acid elongation. The jojoba cDNA is homologous to the recently cloned Arabidopsis FATTY ACID ELONGATION1 (FAE1) gene that has been suggested to encode KCS. We characterize the jojoba enzyme and present biochemical data indicating that the jojoba cDNA does indeed encode KCS.
Transformation of low erucic acid rapeseed with the jojoba cDNA restored KCS activity to developing embryos and altered the transgenic seed oil composition to contain high levels of VLCFAs. The data reveal the key role KCS plays in determining the chain lengths of fatty acids found in seed oils.

=> d l29 17-18 ab

L29 ANSWER 17 OF 18 AGRICOLA

L29 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2002 ACS
AB Jojoba (***Simmondsia*** ***chinensis***) is a unique plant in which the fatty acid compn. consist of unsatd. fatty acids entirely, all of which being deriv. of the oleic acid. The content of eicosenoic acid

(20:1) in lipids was highest (35%). Leaves contained polar lipids with a 46% linolenic acid content. The reserve waxes contained unsatd. acids of types 20:1 and 22:1, but these did not appear in leaves. The biosynthesis of reserves lipids is discussed and schematically presented. During germination reserve waxes are mobilized and ***transformed*** into sol. carbohydrates without the accumulation of intermediary products. Enzymes involved into the process are detailed and the recovery and tech. use of the jojoba oil is discussed.

=> s euphorbia(w)lathyris and transform?
L31 4 EUPHORBIA(W) LATHYRIS AND TRANSFORM?

=> d l31 1-4 ab

L31 ANSWER 1 OF 4 AGRICOLA

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AB Chinese and African Euphorbiaceae plant extracts were shown to have a markedly enhancing effect on Epstein-Barr virus (EBV)-induced ***transformation*** of human lymphocytes. When 5 x 105 cord blood lymphocytes were seeded into the semisolid agar medium immediately after EBV exposure, 3-10 times more colonies developed in the presence of the plant extracts at their optimal doses. When a smaller number of 5 x 104 cells were seeded, ***transformed*** colonies were also observed in the presence of the plant extracts but not in their absence. All of the colonies picked up from the agar medium were EBV-determined nuclear antigen (EBNA)-positive and showed the typical blastoid morphology. There were no colonies detected in the EBV-uninfected cultures with the extracts, indicating that the virus was required for the promotion by these plant extracts of this lymphocyte ***transformation*** . Euphorbiaceae plants are known to be employed as local herbal drugs in southern China and tropical Africa, and the possible role as a co-factor of the plant extracts in the development of nasopharyngeal carcinoma (NPC) and African Burkitt's lymphoma (BL) is discussed.

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AB ***Euphorbia*** ***lathyris*** (Gopher Purge) produces two or more potential antitumor agents and a rodent repellent. We report here the successful ***transformation*** of ***Euphorbia*** ***lathyris*** seedlings by Agrobacterium rhizogenes ATCC 15834, resulting in several hairy root clones. The terpenoid prodn. and growth kinetics of these ***transformed*** root clones have been studied and compared to normal (Euphorbia) plants. Growth rates of the ***transformed*** clones are significantly faster-than normal roots. Regeneration of whole plants from these roots has been attempted. Normal E. lathyris regenerates easily, but the altered endogenous auxin levels and phytohormone sensitivity of the ***transformed*** tissues must be counteracted with cytokinins or other regulators, to develop non-root morphologies (callus, etc.). We have detd. and compared the terpenoid levels of ***transformed*** and non- ***transformed*** tissues, and used an Artemia salina bioassay to do a preliminary screening for bioactive compds.

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---Logging off of STN---

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